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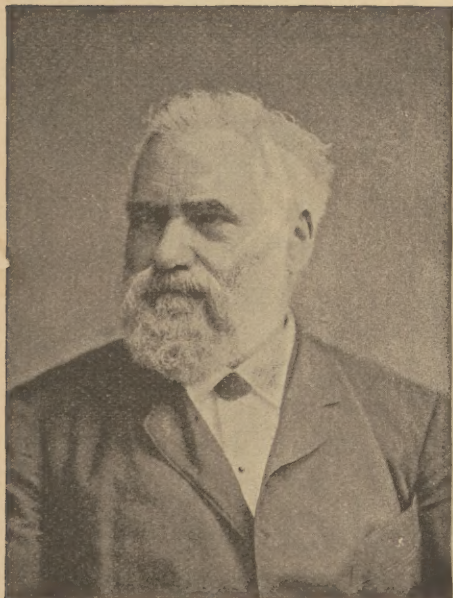






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Prof. Dr. F. Pittenger

Director of Hygienic Institute, Munich.





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# JAROS HYGIENIC WEAR

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THE THERAPEUTIC AND PROPHYLACTIC  
APPLICATION.

---

BY  
I. JAROS. ✓

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WITH ILLUSTRATIONS.

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NEW YORK :

JAROS HYGIENIC UNDERWEAR Co.,

52 EAST 10TH STREET.

QTA  
J37i  
1890

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BY

THE JAROS HYGIENIC UNDERWEAR CO.

1890.

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FOURTH EDITION.

**To the learned gentlemen of the  
Medical Profession.**

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The comments herein given on the value of the  
“JAROS HYGIENIC UNDERWEAR” are acknowledgments  
on the practical accomplishment of scientific theories.

Prof. Mattieu Williams remarks:

“They present an interesting instance of how  
a logical effort to apply pure science to practical  
business may react in such a manner, that practical  
business shall become a beneficent contributor to pure  
science.”

I tender thanks for the kind expressions herein  
embodied, all of which are given with due regard  
for the ethics of the profession.

Yours,

A handwritten signature in dark ink, reading "J. Jaros". The signature is written in a cursive style with a large, looping initial "J" and a trailing flourish.

NEW YORK, 1890.

Professors Von Pettenkofer, Parkes, and Buck, pronounced Hygienists, have contributed largely to establishing theories regarding clothing materials and their relations to health. These conclusions have led to a more general consideration thereof, in the therapeutics, as well as prophylaxis in medical practice.

Wool is regarded as deserving first consideration.

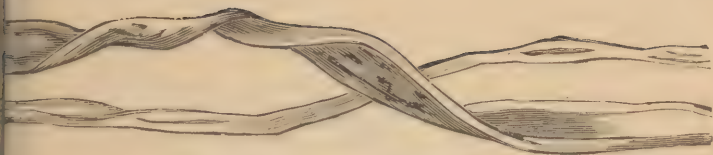


MAGNIFIED—WOOL FIBRE.

The fibres are cylindrical collections of numerous cells, and present each the appearance of a tube covered with epidermic scales which overlap each other. The zigzag markings are characteristic.

Cotton, for various reasons, may be regarded as next in importance, providing consideration be given to the manner of application, in combination with wool.

This is fully verified by Krieger's experiments.



MAGNIFIED—COTTON FIBRE.



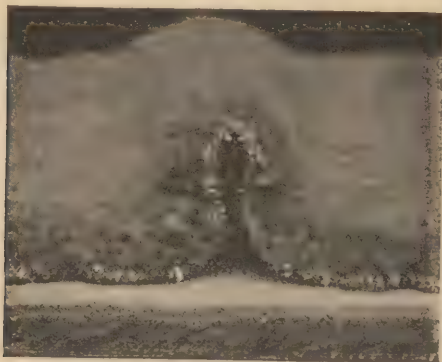
SECTION SAME—COTTON FIBRE.

The fibres of cotton appear to be made up of flat, ribbon-shaped cells, thicker at the edges than in the middle. They are irregularly twisted, with a broad longitudinal cavity more or less well defined. There is frequently a kind of net-work striation apparent on the surface.

With regard to the comparative value of these fibres in application we refer here to the Tables of Mattieu Williams, page 31 of this Treatise. It remains, therefore, to have a material of these fibres so constructed that it will embody all scientific essentials. The first satisfactory material of the "Jaros Hygienic Wear" was laid before the Medical Profession in Chicago, November, 1884, and, guided by their suggestions, the "Wool Fleece Fabric" was so materially improved that, on January 4, 1886, L. L. McArthur, M. D., in a paper before the Chicago Medical Society, states: "Now, gentlemen, this device was a particularly 'happy one,' in that all the requirements of a truly



hygienic wear are provided—porosity, warmth, absorbent powers and elasticity.”



JAROS HYGIENIC MATERIAL—MAGNIFIED.

It will be seen that the material is a fleecy wool surface knitted into a cotton framework—resembling in many essential points a natural sheep's pelt. A prominent factor regarded in the claim for a reproduction of the natural pelt, is the preservation of the yolk

### *THE YOLK,*

which, if left in the wool, preserves its pliancy. It forms a kind of natural soap, consisting principally of potash salts with animal oil almost entirely soluble in cold water. Special care must therefore be taken in washing the wool, and this has been one of the latest results added to the success of the "Jaros Hygienic Material." The features warranting precaution in scouring wool, and advised by scientists, are based on the following possibilities: Excess of alkali has to be guarded against, since uncombined caustic acts energetically on the wool fibre, and is indeed a solvent of it. On this account soap solutions cannot be too carefully prepared to prevent making the wool brittle.

"A material of loose texture confining much air in its interstices is warmer than same amount of clothing material closely woven. Wool or cotton carded and spread out in the shape of a wadding and held, will make a warmer garment than the same quantity spun and woven, and similarly covered. This applies with force to underclothing."—"Ziensen," Vol. XVIII.

PROPHYLAXIS.—In the consideration of a prophylactic measure this Underwear accomplishes the desideratum for protection.

L. D. Rogers, 'A.M.,' 'M.D.', in a paper, states :

A fabric, therefore, so constructed as to allow a layer of woolen fibre to lie between the skin and a layer of cotton fibre, and sufficiently open and loose as to contain the largest possible amount of air is the ideal. *The Faros Hygienic Underwear material, a new fabric, seems beautifully adapted to this end. A layer of woolen fibres, soft and fleecy, is firmly held on one side of and in the meshes of an exceeding porous cotton fabric, so that while one extremity of a fibre lies against the skin, the other is in contact with the cotton; thus admitting of the rapid transference of all dampness of perspiration to the cotton where it is retained, and consequently leaving no moisture next to the skin to absorb and diminish the heat of the body. The importance of this subject, and the possibilities of this new fabric for the prevention of colds, and their resultant diseases, can only be appreciated when we remember the simple fact that it is impossible to take a cold so long as a healthy condition of the skin, and an even temperature of the surface of the body, are maintained.*

## REPORT OF C. B. HOLMES, President Chicago City Railway Company.

"The Jaros Hygienic Underwear" has been in use with Conductors and Gripmen of this Company since November, 1885, having been recommended by the Company's Surgeon, Dr. D. A. K. Steele. We speak for the men in asserting that this underwear is considered the best possible protection against cold and changeable temperatures, which are especially characteristic of this latitude, and its use has resulted in great protection of health and a corresponding increased efficiency. With conductors, whose occupation necessarily prevents the wearing of a very heavy overcoat, it is of great advantage, and gripmen and drivers are enabled to thoroughly protect themselves in their exposed positions without an overplus of clothing, otherwise necessary."

These citations might be continued at great length, covering Reports of Police and Fire Departments in our large cities, and from many Railway Corporations and Physicians.

**THERAPEUTICS.**—In the Therapeutics of Medicine the Underwear is regarded as specially indicated in Rheumatism, Kidney Disease (Bright's), and Pulmonary Consumption.

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### RHEUMATISM.

J. NEVINS HYDE, A. M., M. D., gives expression as follows:

"I have often employed the "Jaros Hygienic Underwear" in cases of muscular and other forms of rheumatism, and always with advantage to the patient. I have had knowledge of these undergarments sufficiently long to justify me in stating very positively that I regard them as a valuable means of protecting the surface of the body from the climatic changes to which it is much exposed."

---

DAVID WARMAN, M. D.

"One of my patients wearing the "Jaros Hygienic Underwear" is a sufferer from muscular rheumatism, and since he donned the garments he has not had an attack, although the weather has just been of the kind to produce the disease."

## KIDNEY DISEASE.

### BRIGHT'S DISEASE AND ALLIED AFFECTIONS OF THE KIDNEYS.

By CHARLES W. PURDY, M.D., Prof. of Genito-Urinary and Renal Diseases in the Chicago Polyclinic.

#### Chapter 1 —Albuminuria.—Pages 54-55.

"THE SKIN.—\* \* \* The most thorough protection to the skin is secured by the use of the JAROS HYGIENIC WEAR, especially during the cold and damp season. \* \* \* It will be seen that the cotton fabric secures a comparatively static condition of air next the skin, while the fleece wool combines the minimum radiation of heat from the body with the greatest attainable hygroscopic power, thus securing uniform dryness and warmth of the skin under various conditions of atmosphere. Dr. L. L. McArthur has demonstrated before the Chicago Medical Society the superiority of the Jaros Wear over all other fabrics for the purpose of protecting the skin against rapid changes of temperature and humidity, and my own experience with it altogether bears out his deduction."

DR. I. N. DANFORTH, in January, 1886, states:

"I am much impressed with the value of the "Jaros Hygienic Wear," especially in renal and other diseases in which sudden changes of body temperature are hazardous. I think it will prove a valuable addition to our means of treating chronic, renal and other diseases in which full protection of the skin is all important."

## PULMONARY CONSUMPTION.

J. W. PRICE, M. D.

ADDRESS BEFORE ELMIRA ACADEMY OF MEDICINE, JULY, 1887.

#### *Curability and Treatment of Pulmonary Consumption.*

"The dress of the consumptive patient should be adapted to equalize the temperature of the body, so loose that it interferes in no way with the natural functions. The underclothing should be woollen, either lamb's wool or flannel. After an extended observation of the benefits derived from wearing the "JAROS HYGIENIC UNDERCLOTHING,"—a wool fleece knit material of graded weights, adapted to the season, I believe it to be the best protective device yet known for these patients.

"They are excellent non-conductors of changes of the temperature, and at the same time absorb cutaneous moisture—two most important qualities."

Added to these statements are many more in this Treatise.





#### WOMEN'S COMBINATION SUIT.

Properly *fitting garments* are advised, and as an illustration of the results achieved, exact reproductions from life are given. The manner and style adopted, is in keeping with all other features accomplished. The matter of detail has been sufficiently thorough to embody also the point of seaming.

#### SEAM.

A special seam is used to overcome objections which caused discomfort and irritation. This seam is flat, soft, and lends to the garments the appearance of seamless wear, to which is added the perfect fit only reached in cut and sewed underwear.



MENS' SUIT.

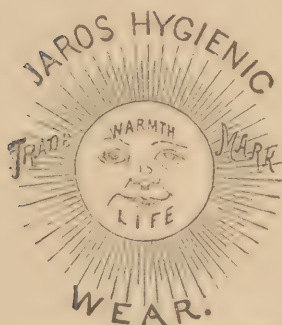
*CONCLUSION.*

In the summary of the results of practice with the "Jaros Hygienic Underwear" by U. S. Army Posts, U. S. Navy Pay Inspector's Department, Police and Fire Departments, Railway Companies, etc., etc., all scientific recommendations find verification.

Continuing the work of research and experiment, the aim is to aid the Profession in gaining the results desired with an ideal in clothing material.

CAUTION.—The success of the "Jaros Hygienic Wear," and the recognition earned, has prescribed utmost care in properly stamping the Wear to protect the Profession against possible misrepresentations.

BELOW IS TRADE-MARK.



"Registered Pat. Nos. 16060, 16166."

# HYGIENIC CLOTHING.

BY L. L. MCARTHUR, M. D.

Treasurer Medico-Legal Society, Chicago: Attending Physician Michael  
Riess and Mercy-Hospitals, Chicago.

Abstract of a paper read before the Chicago Medical Society on January 4, 1886.

The object of clothing should be the promotion and maintenance of good health, together with a feeling of well-being under all atmospheric conditions.

Consideration of the subject naturally sub-divides itself into :

- I. Materials.
- II. Texture.
- III. Form of clothing.

Chief among the materials used for clothing in the order of their respective merits are linen, cotton, silk, and wool, the latter being the best.

A few words as to these materials in the raw state.

Linen conducts heat better than cotton, silk or wool. It absorbs moisture and does not shrink. Cotton, also a vegetable fibre, which is hard, durable and does not shrink, has serious objections, in that it is very non-absorbent of moisture. It does not conduct heat as well as linen, but more rapidly than silk or wool.

Silk, an animal product, consisting of fine, smooth

round fibrillæ, having been in the liquid condition before leaving the body of the silkworm, possesses no central canal, and no oily coating. It is quite a good absorbent of moisture, ranking next to wool. At ordinary temperature it always contains between 9 and 12 per centum of moisture. In its sale or purchase, account is taken of the amount of moisture in order to protect the purchaser from paying silk prices for water.

Wool, the fleece of sheep, an animal fibre, whose function in nature has been two-fold, the protection from cold, and an aid to evaporation of cutaneous moisture, is admirably fitted as a material for clothing. It permits but slow radiation of heat, and absorbs moisture better than any other clothing material. It does this, according to Parkes, in two ways: 1st. By interposition between the fibres. 2d. By penetration into the central canal. His experiments led him to believe its hygroscopic powers double in proportion to its weight and quadruple for surface, as compared with cotton or linen. Perfectly dried wool has the power of absorbing 50 per centum, by weight, of water. Under ordinary conditions it contains 12 to 18 per centum.

Other things being equal, then woollen fabrics will best prevent too rapid radiation of heat; silk next, cotton third, linen fourth.

Wash-leather, buckskin and chamois-skin need not be considered, for one or all of the following reasons: Expense, poor provision for evaporation, poor washing qualities.



As absorbers of moisture, rank, respectively: wool, silk, linen and cotton.

*The advantages of cotton over wool lie in its cheapness and non-shrinking qualities. If properly constructed, however, the advantageous properties of wool can be utilized without the shrinking by using a cotton framework, into the meshes of which the loose, raw fleece is worked.*

That fabric will be best adapted for health, which combined with greatest porosity, possesses the least (a) conductivity, (b) greatest hygroscopic power, and (c) best shape.

By porosity is understood the freedom with which air can pass through the interstices of a fabric. Pettenkofer's practical demonstrations with the following cloths, shows that if heavy flannel be taken as permitting 100 parts of air to pass, linen permitted 60.3 or 60 per centum; lambskin 50.7 or 50.7 per centum; silk fabric, heavy, 14.4 or 14.4 per centum; glove-leather 1.5 or 1.5 per centum.

The conclusion follows that porosity does not injure the powers of preventing radiation (it even increases it) for flannel, admittedly the warmest clothing, permits the freest circulation of air.

In consequence of the fact of a fabric's possessing great porosity, it contains in its interstices what might be called "residual air." Whether gases possess conductivity is open to discussion, but this is certain, that such power is very small. Could we by any means en-

velop the body in a layer of stationary air, we could reduce the heat-loss to a minimum. A striking example of the poor conductivity of *stationary air* is related by Dr. Kane, the Arctic explorer, who found that on perfectly still days they could withstand, without suffering, a temperature of  $-70^{\circ}\text{F.}$ ,\* with ears and hands exposed, but the moment a breeze sprung up it became necessary to seek immediate shelter.

Although impossible to perfectly accomplish this, (*i. e.*, the surrounding of body in a stationary envelope of air), that cloth or fabric which most nearly approximates this, other things being equal, will prove itself the warmest as well as best adapted for evaporation of cutaneous moisture. Such a nearly stationary air occurs naturally in the various pelts, and although in many the integument is visible beneath, yet they can withstand the most rigorous weather. Thus Krieger's experiments with tin cylinders containing hot water with two coverings of different materials, between which an interval of  $\frac{1}{8}$  to  $\frac{1}{4}$  inch was left, proved (after subtracting the amount due for conduction) the impediment to radiation by the second layer to be, *viz.*: linen, 32; silk, 32; flannel, 29.

Thus showing that the stationary air, rather than the material out of which the second layer was made, was the main factor in preventing radiation.

He then experimented with single and double layers of the same material surrounding these cylinders, obtaining the following instructive results; the numbers

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\* $70^{\circ}\text{F.}$  below Zero.

representing the proportionate loss of heat through double to single layers, the losses through the single ones being taken at 100:

Double Stuff, ("Doppel Stoff") Fleece-lined cotton..	69—76
Buck-skin.....	74—86
Flannel.....	86
Home-spun linen.....	91
Stout, extra heavy silk.....	94

From these results the conclusion is obvious that the substance and its weight are of less consequence, where *radiation* is in question, than its texture and volume. Believing that the explanation was due to the "residual air," experiments have been made with loose wadding, noting the rapidity of fall of temperature, on compressing the same wadding, when the fall was far more rapid.

Again, the loss of heat through a rabbit's fur being taken as 100, when shorn of its hair it rose to 190; and further destroying its porosity by a coating of gum-arabic, it rose to 296. (Dict. Hygiene.)

By greatest porosity best provision is made for the evaporation of perspiration, the quantity of which varies greatly under different conditions. In a day of rest the amount as determined by Seguin and Voit is 900 grams (about 1 quart). During exercise it may increase to quantities incredible, were the figures not furnished by the best of observers. For example: Dalton mentions its increase to 380 grams per hour! and Dr. Southwood Smith has seen it rise to 1,600 grams per hour during violent exercise in a heated atmosphere!

Now, if a clothing possesses no porosity, *e. g.*, the mackintosh, and rubber clothing generally, even without exercise, there would collect somewhere beneath it a quart of water, but if exercise be indulged in, the quantity may become large indeed; particularly after the atmosphere beneath has been surcharged with vapor, and evaporation ceases to occur from the surface, and with it the grateful cooling process. The French Government has not permitted its introduction into its army for such obvious reasons. Of course, for a short time during a shower they may and do prove useful; but I am convinced that many have incurred most serious injury, even death, by throwing off the rubber clothing after the inner clothing had become permeated with moisture, when the chilling, incident to the sudden increased evaporation, has resulted in some acute inflammation.

Moreover, the evaporation of the normal cutaneous moisture (with that of the lungs) requires 750 heat units or one-fifth or all the heat produced in the system. (Dalton.) Conservation of part of this loss contributes an equivalent amount of force to the organism, since heat and force are interchangeable terms. *This can be done.*

Under normal conditions evaporation of perspiration occurs in the "insensible," *i. e.*, vapor state, but change of these conditions (increased heat, and moisture in the atmosphere, increased exercise, etc.,) causes it to collect upon the integument in the visible or sensible state, and

unless conducted away, may chill the body. Prevention of such condensation will avoid such dangerous and deleterious influences. The cause of condensation is a lowering of the temperature. *We have simply to maintain its temperature until at a perceptible distance from the body. This can be accomplished by a layer of loose wool, such as is hereafter described. The "residual air" having been once raised to the body temperature, it remains so, and the vapor does not assume the liquid state until meeting with the chilling influences in the outer layer of cloth.*

Finally, bodies passing from the gaseous to the liquid state emit the heat—latent heat—which was essential to their assuming the gaseous condition. This occurring in the case of perspiration in the cloth interstices increases by just so much their warmth, in other words lessens the demand for heat production.

Before leaving the subject of texture, note should be made of the importance of its being of a loose nature. *However great the hygroscopic power of a material in the raw state, if it be tightly woven that power is greatly diminished, or even quite destroyed. Hence the advantage of loosely knitted over tightly woven goods.*

Important indeed is the proper fitting of clothing. However good the materials they may then not accomplish their purpose for the following reasons:

I. By close application to the skin certain materials acting as cutaneous stimulants, maintaining an active equable circulation. Wool possesses this property most

markedly; even in some delicate skins proving an irritant. A very marked increase of oily matter is excreted over these areas where oil-glands exist in greatest abundance, *i. e.*, mesial line of thorax, in front and behind; thus improving the flexibility of the skin.

II. By fitting neatly, chambers of air heated by the body are not with every change of position of the wearer forced out, as occurs in illy-fitting clothing. Upward currents of air naturally occur, and if permitted to exist carry off large amounts of caloric. Simple attention to these two facts reduced the death rate of the Wurtemberg Army Corps from 3.22 to 1.64, as compared with the other departments of the German Army.

The general application and advantages of such an ideal clothing to diseased conditions, it is needless for me to describe to a body of medical men; but particular references ought to be made to rheumatism and nephritis, ("kidney troubles.") To the former, because best provision is made for cutaneous elimination (always acid!) so essential in that disorder, in which there is so marked a diminution in the alkalinity of the blood; to the latter because sudden congestions are obviated in an organ already overworked, by preventing sudden chilling of the surface.

*It only remains for me to call your attention to my accidentally finding such a clothing upon a patient of mine (Mr. Faros), and the tests to which I have put it.*

*He described its history and manufacture as follows :*



*"While suffering from an attack of rheumatic sciatica in the Harz mountains, following a peasant's advice, I enveloped myself in loose lamb's fleece which he provided, and I experienced speedy relief. On reaching Berlin I consulted Chief-Councillor-of-Health, Dr. Abarbanell, who advised me to have constructed some underwear with a fleece lining. I sought a weaver and had some underwear knitted, into the meshes of which were worked, "by hand," during the process of knitting, layers of loose lamb's wool."*

Now, gentlemen, this device was a particularly happy one, in that all the requirements of a truly hygienic wear are provided for.

*Porosity, warmth, absorbent powers and elasticity. With advice he set to work and perfected a modification of the knitting machine which incorporated into the meshes of the cloth loose lamb's wool. The samples presented speak for themselves as to its success. By the use of such a fabric, perspiration (unless excessive indeed) remains in the insensible state until it meets with the cooling influences externally in the cotton framework, the integument remaining dry, while the cotton back, as well as the linen shirt over it, may be "wringing wet." Exposure to cold draughts with such a suit does not chill the integument because the sudden increased evaporation occurs at a distance from the skin, and is separated from it by a layer of wool.*

*To test the soundness of the theory I submitted my-*



self to a temperature of  $115^{\circ}$  F., under as nearly as possible the same atmospheric conditions, with the three chief winter suitings, and obtained the results in table below:

	Jaros Hygienic Wear.	"Nonotuck" Silk Suiting, heavy.	Cartwright & Warner's
Weight after....	8,020	7,867	10,840
"    before exposure.....	7,010 grs.	7,140	9,600
Difference:.....	1,010 grs.	727 grs.	1,240
Degree of absolute dryness of air	61.827	77.32	69.947
Temp. dry bulb therm.....	$115^{\circ}$ F	$113^{\circ}$ F	$116^{\circ}$
Temp. wet bulb therm.....	$9^{\circ}$	$83^{\circ}$	$88^{\circ}$
Sensation .....	Warm but not sticky; outer surface damp; skin dry where wear touches; comfortable.	Cooler than other wear; sticky; skin damp; comfortable.	Sticky, clammy; wet through; uncomfortable.

From these experiments it is to be seen, that of all the perspiration exuded, the silk retained (by a small amount) the least; the hygienic wear the next, and the English woollen goods the most. Note, however, must be taken of two facts concerning the experiment with the silk clothing.

1st. The temperature was  $2^{\circ}$  F. lower than when testing the hygienic wear, and  $8^{\circ}$  than the English goods. Hence less perspiration was thrown out.

*2d. There was a difference of  $15.5^{\circ}$  of absolute dryness of the atmosphere, hence evaporation took place more rapidly from the silk goods in the dryer atmosphere. The barometer remained almost stationary during the three days of observation.*

*On emerging from the hot room into one of a temperature of  $70^{\circ}$  F., an immediate chilling was felt with the silk goods; while the English gave a sensation of moisture and cold. The chilly sensation was not experienced with the woolen-lined hygienic wear.*

### CONCLUSIONS.

*1st. That fleece-lined goods are warmest.*

*2d. Permit at least equal evaporation with the silk.*

*3. Guard against sudden chilling of the body.*

*4th. Are cheaper than silk and as cheap as Cartwright & Warner's.*

*5th. Are particularly indicated in rheumatism and kidney disease.*

# PHILOSOPHY OF CLOTHING.

● BY MATTIEU WILLIAMS.

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The following extracts are from the experiments and conclusions of Rumford, with supplements by Prof. Mattieu Williams, of England. (See "Knowledge," Nos. 171 to 205, "Philosophy of Clothing.")

The physiological confirmation of these results are not quoted; confining the citations to the qualitative value of fibres, especially sheep's wool, and the possibility of materials therefrom that possess the *essentials* recommended.

"The first use of clothing being to keep the wearer warm, Rumford's first inquiry was directed to find the best material for this purpose. He saw at once that clothing did this by resisting the passage outwards of the animal heat.

He accordingly constructed a model wearer, as described in the following experiments: A mercurial thermometer, whose bulb was  $\frac{5}{100}$ th of an inch in diameter, and its tube about ten inches long. This was suspended in the axis of a cylindrical glass tube about

three-quarters of an inch in diameter, ending with a globe  $1\frac{6}{10}$  inch in diameter, in such a manner that the center of the thermometer bulb occupied the center of the globe, thus leaving a surrounding space to be occupied by the material to be examined. The thermometer tube was graduated with 800 divisions between the freezing and boiling points of water—*i. e.*, a Reaumur scale divided to tenths of degrees. The thermometer was held in its place by a long cork stopper.

He described his method of clothing the bulb as follows: The thermometer being taken out of the cylindrical tube, about two-thirds of the substance which as to be the subject of the experiment is introduced into the globe; after which the bulb of the thermometer introduced a few inches into the cylinder; and after it, the remainder of the substance being placed round about the tube of the thermometer: and lastly, the thermometer being introduced further into the tube, and being brought into its proper place, that part of the substance which, being introduced last, remains in the cylindrical tube above the bulb of the thermometer, is pushed down into the globe, and placed equally round the bulb of the thermometer by means of a brass wire, which is passed through holes made for that purpose in the stopple closing the end of the cylindrical tube.

The temperature he selected as the starting point was 70 degrees Reaumur=190 degrees Fahr. He

preferred this to the boiling point, as he could obtain it accurately by first plunging the whole apparatus duly charged into nearly boiling water, then allowing it to fall to 70 degrees, and immediately plunging it into a mixture of pounded ice and water, where, by the aid of a little agitation, it remained steadily at the freezing point.

The following table shows the results with the substances therein mentioned, the quantity in each case being 16 grains :

HEAT LOST.	RAW SILK AS SPUN BY THE WORM.	SHEEP'S WOOL.	COTTON WOOL.
70°	.....	.....	.....
60	94"	79"	83"
50	110	95	95
40	133	118	117
30	185	162	152
20	273	238	221
10	489	426	378
Total times..	1,284	1,118	1,046

The clothing value or "warmth" of these substances as thus applied varies directly with these figures, representing the passage of heat or their "non-conducting" power.

The experiments described were directed to the determination of the relative power of different materials. (We have only quoted the substances most

generally used for clothing purposes.) These were followed by another series upon certain given materials differently arranged, or in different conditions of density. The same "passage thermometer" was used. The question to be determined was, whether the protecting power of the substances used in the previous experiments was due to the non-conduction of the material of those substances themselves, or whether the air imprisoned between their fibres was an important factor. If the silk, wool and cotton did all the obstructive work independently of the air, then the amount of obstruction should vary with the quantity of fibre. As, in the experiments already described, the fibres were loosely arranged round the bulk of the thermometer, it was easy to increase their quantity by packing them more closely, and yet retaining the other conditions of bulk, etc., the same.

It was evident from the results, with 16 grains, 32 grains, 64 grains, that the protective power does not increase nearly in the same proportion as the quantity of material when packed in the same space. Had such been the case, and the rate of cooling proportionately retarded, the experiment (with eider down from the duck) with 64 grains should have been  $1,304 \times 4$  5,216 seconds, instead of only 1,615 seconds.

The following displays the results obtained by using the same material, in same quantity, but differently disposed, 16 grains of each:

Heat lost or amount of cooling.	Raw Silk.	Sewing or knit- ting silk wound round bulb.	Sheep's wool, loose.	Woolen Thread wound round bulb.	Cotton wool, loose.	Cotton Thread wound round bulb.	Lint, loose.	Linen Thread wound round bulb.	Linen Cloth wrapped round bulb.
70°									
60	94 <sup>11</sup>	46 <sup>11</sup>	79 <sup>11</sup>	46 <sup>11</sup>	83 <sup>11</sup>	45 <sup>11</sup>	80 <sup>11</sup>	46 <sup>11</sup>	42 <sup>11</sup>
50	110	62	95	63	95	60	93	62	56
40	133	85	118	89	117	83	115	83	74
30	185	121	162	126	152	115	150	117	108
20	273	191	238	200	221	179	218	180	168
10	489	399	426	410	378	370	376	385	338
Tot. times.	1,284	904	1,118	934	1,010	852	1,032	873	780

From this it is to be seen that sheep's wool loose would retard the passage of heat more perfectly than when spun into thread.

THE "JAROS HYGIENIC MATERIAL." *of sheep's wool unspun worn next the body possesses the essentials for non-conduction of heat in a manner described.*)

It is an instance how an effort to apply pure science to practical business may react in such manner that practical business shall become a beneficent contributor to pure science.

Another practical question suggested is: Whether clothing materials differ in their powers of absorbing the cutaneous exhalations; if so, which are the most effective, and what are the relations of this function to that of confining air, and thereby maintaining the temperature of the body? If these two functions are



opposed, then how shall we effect a compromise? If, on the other hand, they go together in any special material, the desirability of using this material is doubly indicated.

*Sheep's wool* does absorb (see Knowledge 191) the aqueous vapor. Loosely distributed fibres of wool in a suitable fabric take hold of the vapor of the insensible perspiration in the gaseous form, and by virtue of gaseous diffusion continually exchange this with the gasses of the outer atmosphere.

The conclusions, therefore, is that such a material is best suited for clothing, both in winter and summer.

Sir John Billingham (lecturer on Military Surgery) mentions his experience in India, and the proof of the utility of wool in checking the progress of a most aggravated form of dysentery in the Second Battalion of the Royals. The result of this has led to the enforcement of the use of belts for tropical service. Mr. Sage of the Army Clothing Depot at Pemlico, tells me many thousands have lately been made there.

My experience and subsequent observations have proven that, although loosely woven flannels may advantageously prevent the sudden chills from the evaporations of accumulated perspiration, this is better *done by a knitted fleecy wool fabric worn next the skin.*

## JAROS HYGIENIC MATERIAL,

WOOL FLEECE KNIT.

# HYGIENIC UNDERWEAR

BY L. D. RODGERS, A. M., M. D.

(From Peoples' Health Journal, October, 1885.)

Considerable scientific attention has recently been very profitably devoted to the question of fabrics for underwear most conducive to health. Interesting experiments have been made developing facts which will surprise almost everyone on learning them for the first time. One of the simplest and most readily understood of these experiments was that of filling tin cans with hot water and wrapping each one with a different fabric, and then observing with thermometers the varying rapidity in the loss of heat. Thus showing accurately the relative heat preserving value of each fabric. Of two cans surrounded with the same amount of common cotton batting, in one case the cotton being compressed, and the other not, the loss of heat was found to be much more rapid in the former than in the latter. Showing, therefore, conclusively, that loose open fabrics are warmer than those which contain less air in their interstices. This accords with the well-known fact that the new flannel is warmer than old which has undergone the felting or fulling processes. Assuming that

flannel contains 100 units of air in its interstices, the permeability of other substances have been found to be as follows: Linen, 58; silk, 40; buckskin, 58; kid, 1; chamois, 51. Doubling the layers of any given material does not diminish the loss of heat in the same proportion. Assuming the loss of heat through a single layer to be 100, through a double layer of the same material it is found to be as follows: Thin silk, 97; gutta percha, 96; shirtings, 95; stout silk, 94; thick home-spun linen, 91; chamois leather, 88-90; flannel, 86; summer buckskin, 88; winter buckskin, 86. Thus we see that the loss of heat through two layers of thin silk is only three per cent. less than through one layer. The inference is that what the substance is and what its weight, does not make so much difference as its texture and volume. How the body may lose heat rapidly by wet clothing, and ill results follow, is shown by the following experiment: A rabbit was shorn of its fur, its temperature was then found to be 102 degrees. It was wrapped with a wet cloth and placed in a room, the temperature of which was 66 degrees. At the expiration of five hours the temperature of the rabbit was found to be 76 degrees. The capacity of water to absorb heat is known to be greater than any other substance. Now, when our clothing is damp from perspiration or from any other cause, our bodies lose just as much heat as the moisture in our clothing is capable of absorbing. The importance of always having dry material next to the

skin is evident, and that material which will retain the least moisture is the best. Woolen fibre is found to answer this purpose more nearly than any other. In addition to its well-known filtering capacity, it has a greater stimulating action upon the skin than any other. On the other hand, cotton fibre, on account of its great capillary attraction, rapidly absorbs and retains moisture. A fabric, therefore, so constructed as to allow a layer of woolen fibre to lie between the skin and a layer of cotton fibre, and sufficiently open and loose as to contain the largest possible amount of air is the ideal. *The Faros Hygienic Underwear material, a new fabric, seems beautifully adapted to this end. A layer of woolen fibres, soft and fleecy, is firmly held on one side of and in the meshes of an exceeding porous cotton fabric, so that while one extremity of a fibre lies against the skin, the other is in contact with the cotton; thus admitting of the rapid transference of all dampness of perspiration to the cotton where it is retained, and consequently leaving no moisture next to the skin to absorb and diminish the heat of the body. The importance of this subject, and the possibilities of this new fabric for the prevention of colds, and their resultant diseases, can only be appreciated when we remember the simple fact that it is impossible to take a cold so long as a healthy condition of the skin, and an even temperature of the surface of the body, are maintained.*

## TESTIMONIALS.

## BRIGHT'S DISEASE AND ALLIED AFFECTIONS OF THE KIDNEYS.

BY CHARLES W. PURDY, M. D., Prof. of Genito-Urinary and Renal Diseases in the Chicago Polyclinic.

## Chapter 1.—Albuminuria.—Pages 54-55.

THE SKIN.—“\* \* \* The most thorough protection to the skin is secured by the use of the JAROS HYGIENIC WEAR, especially during the cold and damp season. \* \* \* It will be seen that the cotton fabric secures a comparatively static condition of air next the skin, while the fleece wool combines the minimum radiation of heat from the body with the greatest attainable hygroscopic power, thus securing uniform dryness and warmth of the skin under various conditions of atmosphere. Dr. L. L. McArthur has demonstrated before the Chicago Medical Society the superiority of the Jaros Wear over all other fabrics for the purpose of protecting the skin against rapid changes of temperature and humidity, and my own experience with it altogether bears out his deduction.”

## CHRONIC BRIGHT'S DISEASE OF THE KIDNEYS.

J. H. PRICE, M. D., Elmira, N. Y.

(Abstract of Paper read before N. Y. State Medical Society, July, 1886.)

“Fleece lined or silk under garments, according to the season, should be worn next to the skin the entire year. I would especially recommend for these patients the “Jaros Hygienic Underwear.” These garments are light, warm, and delightfully soft. They afford full protection to the body against sudden chilling.

## PHYSICIANS—RENAL DISEASE, GEN'L VALUE. 37

MOSES GUNN, M. D., LL. D., Treas. Rush Medical College, Professor Surgery, 2101 Calumet Ave.

MR. J. JAROS.

CHICAGO, Dec. 10, 1885.

I have been wearing for the past few weeks the fleece-lined under-clothing of the Jaros Hygienic Wear.

As a protection in extreme cold weather, this fabric is most comfortably efficacious. It also reduces to a minimum the unpleasant chilly sensations incident to a sudden change from an overheated room to the untampered cold of out-door winter weather. It possesses, therefore, hygienic value.

MOSES GUNN, M. D., LL. D.

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DE LASKIE MILLER, PH. D., M. D., Secretary Rush Medical College, Prof. Obstetrics.

MR. J. JAROS, City.

CHICAGO, Dec 10, 1885.

I have examined specimens of your "Jaros Hygienic Wear" with much interest. In material and construction these garments fulfill completely the requirements of the scientific essentials in underwear, insuring to the highest degree both the comfort and the health of the wearer, and as such I recommend them.

DE LASKIE MILLER, PH. D., M. D.

I concur in the above.

J. ADAMS ALLEN, M. D., LL. D., President Rush Medical College Prof. Practice of Medicine.

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I. N. DANFORTH, A. M., M. D., Prof. of Renal Diseases, Chicago Medical College.

Chicago Medical College, Medical Department  
Northwestern University, CHICAGO, Jan. 6, 1886. }

J. JAROS, ESQ.

MY DEAR SIR:—I am much impressed with the value of the Jaros Hygienic Wear, especially in renal and other diseases in which sudden changes of body temperature are hazardous. I think it will prove a valuable addition to our means of treating chronic, renal and other diseases in which full protection of the skin is all important.

Yours truly,

I. N. DANFORTH, A. M., M. D.

## 38 PHY'S—PULMONARY CONSUMPTION, BRONCHITIS.

W. F. BOGART, M. D.

BLACK HAWK, COLO., Feb'y 5, '89.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gents:—I am delighted with your underwear for myself, and always recommend it to my patients that are troubled with Lung or Bronchial diseases.

Respectfully,

W. F. BOGART, M. D.

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ADDRESS BEFORE ELMIRA ACADEMY OF MEDICINE, JULY, 1887.

*Curability and Treatment of Pulmonary Consumption.*

BY J. W. PRICE, M. D.

The dress of the consumptive patient should be adapted to equalize the temperature of the body, so loose that it interferes in no way with the natural functions. The underclothing should be woolen, either lamb's wool or flannel. After an extended observation of the benefits derived from wearing the "JAROS HYGIENIC UNDERCLOTHING,"—a wool fleece knit material of graded weights, adapted to the season, I believe to be the best protective devices yet known for these patients.

They are excellent non-conductors of changes of the temperature, and at the same time absorb cutaneous moisture—two most important qualities.

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S. B. MUNN, M. D.

WATERBURY, Conn., Jan. 17, 1888.

JAROS HYGIENIC UNDERWEAR CO.:

I take great pleasure in recommending your HYGIENIC UNDERWEAR as the best I have ever seen.

I have been wearing it now about four months, and can say it is the best protection from colds, and being so thoroughly a non-conductor, prevents the wearer from all ill effects of sudden changes of temperature; also a Rheumatic Prophylactic.

A lady patient of mine, who has suffered some four years with chronic bronchitis, is now wearing it, and is already very much relieved and improving faster with it, and without medicine, than she has previously with medicine, and at the same time wearing good flannel.

Respectfully yours,

S. B. MUNN, M. D.



ROBERT HUNTER, M. D., No. 103 State Street, corner of Washington.

MR. J. JAROS:

CHICAGO, Oct. 24, 1885.

Dear Sir:— have great pleasure in expressing my entire approval of your underwea . It affords a better protection to the body in our variable climate than any kind of flannel in use. Nothing but wool is fit to maintain the capillary circulation of the skin preserve warmth and promote insensible perspiration, without which good health impossible. I find your garments invaluable in the treatment of lung complaints, and recommend them to all my patients.

ROBERT HUNTER, M. D.

JAMES NEVINS HYDE, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, 204 Wabash Avenue,

CHICAGO, February 17, 1888.

Gentlemen:—I take especial pleasure in saying that I have often employed the *Jaros Wear* in cases of muscular and other forms of rheumatism, and always with advantage to the patient.

I have had knowledge of the value of these undergarments for a period of time sufficiently long to justify me in stating very positively that I regard them as a valuable means of protecting the surface of the body from the climatic changes to which it is much exposed in this part of the country.

JAMES NEVINS HYDE.

J. E. HARPER, A. M., M. D.

Prof. Ophthalmology and Otology, College Physicians and Surgeons, Ophthalmic College, and Attending Surgeon Oakwood Retreat, Lake Geneva, Wis.

CHICAGO, June 6th, '88.

To J. JAROS, Chicago, Ill.

Dear Sir:—I have felt for some time that I would like to give expression to my high regard for your 'Hygienic Underwear,' and hope you will accept the following as a spontaneous estimate of its value as an adjunct to the treatment of certain diseases as well as a reliable prophylactic. I have used your underwear in my family and recommended it to my patients during the past year, and am firmly convinced that its merits can not be overestimated as regards a comfortable and protecting material for undergarments.

Persons affected with the rheumatic diathesis, those who have weak heart or lungs, and those having catarrhal troubles, or who take cold easily, should use your underwear constantly.

Respectfully,

J. E. HARPER.

JOHN H. PRICE, M. D., Sec'y Chemung County, Med. Soc., N. Y.

J. JAROS, Esq.

ELMIRA, N. Y., Apr. 29, 1887.

My Dear Sir:—The object of clothing is to preserve the proper heat of the body, by protecting it both from cold and heat, and thus to prevent the injurious actions of sudden changes of temperature upon the skin. This object is most admirably accomplished by the "Jaros Hygienic Wear." I have demonstrated this most important fact in my own person during the past six months. For several years past I have been much annoyed by occasional attacks of muscular Rheumatism. Since I began to wear the "Jaros Hygienic Clothing" I have been almost entirely free from these attacks. I deem them a valuable auxiliary in the treatment of *Consumption, Bright's Disease and Rheumatism*.

Very truly yours.

JOHN H. PRICE, M. D.

E. J. DORING, M. D., President Chicago Medico-Legal Society, 2406  
Prairie Avenue.

CHICAGO, Jan. 14, 1888.

MR. J. JAROS.

Dear Sir:—Referring to your letter of the 12th, I wish to say in reply that I have frequently had occasion to recommend your Underwear for patients suffering from Rheumatism, Neuralgia, etc., and have been entirely satisfied with the results obtained. I shall continue to recommend it.

Very respectfully,

EDWIN J. DORING, M. D.

NORMAN BRIDGE, M. D., Prof. of Pathology and adjunct Professor  
of the principles and practice of Medicine, Rush Medical College.

CHICAGO, 6, 5, 1888.

J. JAROS, Esq.

Dear Sir:—One winter's practical use of the Underwear manufactured by your company, as well as the observation of the use of it by others have convinced me of its great value as an under clothing for protecting the body against cold and various diseases in some measure incident thereto, especially rheumatoid affections. The physical principles of its construction appear to be correct, and it is certainly very agreeable to the wearer.

Most truly yours,

NORMAN BRIDGE.

DAVID WARMAN, M. D.

TRENTON, N. J., Feb. 11, 1888.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sirs:—My experience with your Hygienic Underwear, though somewhat limited at present, I cheerfully give you. One of my patients wearing it is delighted, and so am I. The patient was a sufferer from Muscular Rheumatism, and since he donned your garments he has not had an attack; although the weather has just been of the kind to produce the disease. In this peculiar and ever changing climate of ours, it is important to wear woollen undergarments the year round. They not only protect from cold, but heat as well, by aiding in evaporation from the body and keeping the surface warm.

The principles upon which your wear is constructed is undoubtedly correct, in maintaining a healthy and normal action of the skin and thereby diminishing the liability to taking cold. I take great pleasure in recommending them to my patients.

Sincerely yours,  
DAVID WARMAN.

R. W. BISHOP, A. B., M. D., Prof. Physiology and Dermatology, Chicago  
Med. College.

CHICAGO, Aug. 29, 1887.

JAROS HYGIENIC UNDERWEAR CO.

I have much pleasure in stating that I have used your Underwear for several years, and have found it invaluable as a safeguard against many of the ills caused by sudden and severe climatic changes. I also prescribe it for Rheumatism.

Yours respectfully,

R. W. BISHOP.

S. A. CONKLING, M. D.

CANTON, OHIO, Feb. 14th, 1888.

JAROS HYGIENIC CO., Chicago, Ill.

Gentlemen:—After a trial during the past winter of the JAROS HYGIENIC WEAR I am fully satisfied of its merits in both protecting and properly airifying the body, and especially do I recommend it as being well calculated for persons predisposed to a rheumatic diathesis and a general weakened condition of the nervous system, thereby greatly preventing liability in contracting colds. I also recommend it as a good general underwear because of its absorbing powers.

I am, respectfully yours,

S. A. CONKLING, M. D.

GEO. K. FRANKS, M. D.

BURTON, W. Va., Feb. 13, 1888.

J. JAROS, ESQ.

I have been wearing this winter the fleece-lined underwear of your manufacture.

As a protection in extreme cold weather, especially for physicians in the country who have often to get out of a warm bed and ride several miles in the coldest weather, it has no equal. I have tried silk, as also the best of ordinary flannels, but they fall far short of the Jaros Underwear.

It has always been my misfortune. I was easily affected by cold, viz: easy to take cold. Since wearing the Jaros Hygienic Underwear I have not had a single cold.

For the underwear I claim as much a specific in rheumatism as quinine in intermittent.

Since wearing your goods I have never had a single attack, while before I have not passed a winter without experiencing several severe attacks in the last twenty years.

Respectfully yours,

GEORGE K. FRANKS.

U. S. NAVY.—PAY INSPECTOR DEPARTMENT, U. S. Naval Academy.

ANNAPOLIS, MD., Feb. 23, 1889.

Gentlemen:—I cannot refrain from expressing to you the great satisfaction and enjoyment I have received from the use of your Jaros Hygienic Underwear during the past winter. I have been almost free from rheumatic pains, from which I have heretofore suffered greatly, and also enjoyed an exception from severe colds, which is a very unusual luxury with me in the winter season; all of which I must attribute to the protection afforded by my Hygienics. I am also gratified to find that with the proper care in washing there is no preceptible shrinkage. In short, in every way, I find them the most desirable article I have ever seen for the object to be attained.

I shall be so loth to part with them that I hope you will manufacture a lighter grade for summer wear.

You are at liberty to make any use you may see fit of my testimony.

Very truly yours,

THOS. T. CASWELL,  
Pay Inspector U. S. Navy.

FROM RT. REV. BISHOP CHENEY.

CHAS. EDW. CHENEY.

Rector's Study, Christ Church, 2409 Michigan Avenue,  
CHICAGO, Nov. 29, 1886. }

J. JAROS, Esq., Room 5, Central Music Hall, City.

Dear Sir:—I take pleasure in saying, that by the advice of my physician, I obtained from you two suits of "Jaros Hygienic Wear." I commenced wearing the same two weeks ago Saturday last. Up to that time I had been a sufferer from a torturing rheumatic pain in my right shoulder, which persisted in waking me about 4 o'clock every morning, and which medicines seemed to relieve only temporarily. From the hour that I commenced the use of your Underwear, I have never had the slightest twinging of this pain. I feel under personal obligations to you for the relief which I have experienced.

Very truly yours,

CHAS. EDW. CHENEY.

W. C. DAVIS, M. D., cor. W. Washington Street and Belmont Avenue.

WEST INDIANAPOLIS, Ind., Feb. 14, 1888.

J. JAROS, Chicago, Ill.

My Dear Sir: I have prescribed your Underwear for the use of patients with chronic rheumatism, and always with very satisfactory results. It is also most excellent in the case of persons whose flesh is easily irritated by the ordinary flannel underwear, being soft and light as it is warm.

Respectfully,

W. C. DAVIS.

F. H. VAN LIEW, M. D.

MR. J. JAROS.

HINSDALE, Ill., May 24, 1887.

Dear Sir:—There has been a want in the truly hygienic features in the undergarments so generally offered, which has in many cases added obstacles in the treatment of certain diseases. I feel satisfied that the "Jaros Hygienic Wear" possesses the great essentials in clothing, maintaining an even temperature over the entire body and transmitting moisture in the manner peculiarly claimed for your material. The effect on such patients as I have prescribed it is satisfactory indeed, and the experience on my own person in a case of Articular Rheumatism of long standing, is truly marked. The condition of my body for the last two winters, during which I have used the "Wear," was a feeling of comfort and relief from pain, formerly caused by every change of temperature. For Rheumatism and Catarrhal patients I am free to say this is a valuable adjunct to our means of treating same.

Yours very truly,

F. H. VAN LIEW, M. D.

## 44    PHYSICIANS—RHEUMATISM, GEN'L VALUE.

JOHN H. PAGE, Major 11th Infantry, U. S. A.

MR. J. JAROS, Chicago, Ill.

FORT YATES, DAK., Aug. 18, 1886.

Dear Sir:—I am personally delighted with your underwear, and shall use no other. Was free from rheumatic pains last winter, and I attribute it to the healthy condition of my skin from the use of your clothing.

Very respectfully,

JOHN H. PAGE.

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We refer, with permission, as to the Scientific Principles and Hygienic merits of the Jaros Hygienic Wear.

To H. A. JOHNSON, M. D., LL. D., Emeritus Professor, Chicago Medical College, and

N. S. DAVIS, JR., A. M., M. D., Adj. Prof. Practice Principles of Medicine, Chicago Medical College.

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OSCAR C. DEWOLF, A. M., M. D., Prof. Hygiene, Chicago Medical College, Commissioner of Health.

City of Chicago Department of Health,  
CHICAGO, Dec. 24, 1884.

I have been wearing during the past cold the Jaros Hygienic underwear. I have never worn underclothing which gave me so much satisfaction. The garments are light, warm and delightfully soft, and if properly washed retain their fleecy wool surface.

OSCAR C. DEWOLF, A. M., M. D.

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MARY HARRIS THOMPSON, M. D., Clinical Prof. of Obstetrics and Gynæcology, Women's Med. College,  
26 Central Music Hall,

MR. J. JAROS.

CHICAGO, Nov. 15, 1885.

Dear Sir:—The "Jaros Hygienic Wear" is unsurpassed in its purpose of retaining an equable temperature and moisture of the surface of the body, thus preventing an undue and sudden chilling, thereby inducing catarrhs of the mucous membranes, conditions so common in this latitude. Its economy and therapeutic value is apparent.

Respectfully,

MARY HARRIS THOMPSON, M. D.



ROBERT H. BABCOCK, M. D., No. 70 Monroe Street, Room 29.

MR. JAROS.

CHICAGO, Feb. 10, 1887.

Dear Sir:—I am sincere in expressing a favorable opinion of the "Jaros Hygienic Wear" so far as my experience allows me to judge. The patients to whom I have recommended it are of delicate health, very susceptible to cold. They uniformly expressed themselves as pleased with the garments made for them by you, and as having suffered far less from the cold this winter than usual: a result which they attribute directly to the power of the underclothing to prevent sudden chilling of the body upon transition from a high to a low temperature. Personally, I have worn the underclothing all winter, and believe my unwonted freedom from attacks of bronchitis due to the efficient protection afforded by the underwear. Your cloth seems to me to be a better non-conductor than other woollen materials, and therefore particularly suitable to persons with heart or lung disease.

I am, very truly yours,

ROBERT H. BABCOCK, M. D.

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PLYMMON S. HAYES, M. D., Prof. Gynecology, Chicago Polyclinic.

MR. J. JAROS.

CHICAGO, Aug. 11, 1886.

Dear Sir:—I have found all the indications of a truly Hygienic Wear in your underclothing, and certainly consider it the ideal wear for this climate.

Yours truly,

PLYMMON S. HAYES, M. D.

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We further refer, with permission, as to the therapeutic and prophylactic value of the Jaros Hygienic Wear, to the following medical gentlemen:

S. SMITH, M. D., Emeritus Prof. Materia Medica and Therapeutics, Hahneman Medical College, Chicago.

A. E. SMALL, A. M., M. D., Prof. Principles and Practice of Medicine, Hahneman Medical College, Chicago.

MILTON JAY, M. D., Prof. Surgery, Dean Bennett Med. College, Chicago.

D. A. CASHMAN, M. D., Prof. Hygiene, Bennett Med. College, Chicago.

ALBERT LEFFINGWELL, M. D.

JAMES C. JACKSON, M. D., Head of Staff, Sanitarium, Dansville, N. Y.



L. J. KELLOGG, M. D., Cor. Seventh and I Streets.

J. JAROS, ESQ.

SACRAMENTO, Cal., July 19, 1886.

Dear Sir:—In regard to your goods I am very glad to state their worth. They have proven more efficient than any other wear in the actions for which truly hygienic wear is sought, and therefore I cheerfully recommend it to my patients. It laundries beautifully without shrinking.

Sincerely yours,

L. J. KELLOGG, M. D.

A. TYLER WILCOX, M. D., Cor. Garrison Avenue and Gamble Streets.

MR. J. JAROS.

ST. LOUIS, MO., Jan. 31, 1887.

Dear Sir:—With reference to the use of your "Hygienic Wear" I would say that I am greatly pleased with it. All my patients have been benefited from its use, and are delighted, some saying they would not part there-with for double the cost. In debilitated *Nervous Troubles*, *Kidney*, and especially *Lung Complaints*, it is a therapeutic agent, almost indispensable in this and all northern climates.

Respectfully,

H. TYLER WILSON, M. D.

D. W. BLISS, M. D., 621 Thirteenth Street, N. W., Attending Surgeon on late President Garfield.

WASHINGTON, D. C., Oct. 30, 1887.

JAROS HYGIENIC UNDERWEAR CO.

Gents:—I have been very favorably impressed with the value of your underwear, and especially for persons of impaired health, as a protective measure against the pronounced thermal changes of this locality, and am free to recommend their use.

\* \* \* \* \*

Very respectfully yours,

D. W. BLISS.

J. H. THOMPSON, M. D., 204 Wisconsin Street.

MR. J. JAROS, Chicago:

MILWAUKEE, Wis., Jan. 29, 1887.

Dear Sir:—After months of wear and prescription of the "Jaros Hygienic Clothing," I can fully endorse it as the best wear now used, and I confidently advise it for its prophylactic and therapeutic properties.

J. H. THOMPSON, M. D.

**P. M. LUSSON, M. D.**

MR. J. JAROS, Chicago:

SAN JOSE, Cal., Feb. 6, 1887.

Dear Sir:—I am pleased to state that the "Jaros Hygienic Wear" has proven the nicest wear worn or prescribed by me, and have found them of great value in treatment of delicate patients. By a more general use many people would recover health or prolong life.

Respectfully yours,

P. M. LUSSON, M. D.

WM. H. HAWKES, M. D., 1330 New York Avenue.

MR. J. JAROS, Chicago:

WASHINGTON, D. C., Feb. 5, 1887.

Dear Sir:—There is indeed need of undergarments as you manufacture in a climate so variable. I am satisfied with the hygienic principles underlying them, and have been pleased in prescribing them. Shall be glad to know that the wear is procurable in Washington.

Very truly yours,

WM. H. HAWKES, M. D.

**J. F. JENKINS, M. D.**

TECUMSEH, Mich, Aug. 28, 1887.

JAROS HYGIENIC UNDERWEAR CO.

Gentlemen:—During the winter of 1886 I had the pleasure of testing your underwear on my own person. I found your "Wear" comfortably efficacious throughout the various changes of a severe winter, and in every way it justifies the representations made by you. I shall not hesitate to recommend the "Wear" to my patients where it is indicated.

Yours truly,

J. F. JENKINS.

**F. A. DUNSMOOR, M. D.,**

Dean Minneapolis Hospital College.

MINNEAPOLIS, Dec. 7, 1887.

JAROS HYGIENIC UNDERWEAR CO.

I cheerfully certify to the use and prescription of your Hygienic Underwear. It is the most agreeable and warmest underclothing I ever tried. I am satisfied that in theory and practice it is the best Wear on the market for our climate.

Truly yours,

F. A. DUNSMOOR.

E. L. TOWNSEND, D. D. S., Secretary, Southern California Odontological Society, 237 S. Spring street.

LOS ANGELES, Jan. 23, 1888.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen: The goods purchased of you have given perfect satisfaction, and I have not failed to recommend the underwear to my patients and friends.

The climate here is such that makes your goods almost a necessity, and when properly introduced, I think no invalid will consider himself well clothed without a suit of the JAROS HYGIENIC UNDERWEAR.

I am, yours truly,

E. L. TOWNSEND.

A. J. AUTEN, M. D., corner of Wabash and 3d Streets,

ST. PAUL, Minn., Jan. 1888.

MR. JAROS.

Dear Sir:—The Jaros Hygienic Wear meets with my most hearty approbation. It is an ideal of perfection in every respect.

Respectfully,

A. J. AUTEN.

CLARA BLISS HINDS, M. D., 607 Thirteenth street, N. W.

WASHINGTON, D. C., Feb. 1888.

My Dear Sir:—My attention was called to your Hygienic Underwear during the session of the International Medical Congress in our city last September. Being then in search of underwear, which combined the requisite of warmth, lightness and durability, I determined to try yours, hoping to find an article which I could with confidence recommend.

I take pleasure in saying that after wearing the garments four months I find them all I had hoped, and even more.

I have recommended them in several cases of uterine trouble, as well as for delicate children, and without an exception the patient improved, which, as other conditions were equal, I know was due to the underwear.

Maintaining an even warmth over the entire surface of the body the circulation is improved, the various organs respond, and a general improvement in the patient is the result.

I unhesitatingly recommend the Underwear, and earnestly hope that many physicians may try it in chronic uterine troubles, and in the wasting diseases of childhood, as I feel great good to suffering humanity will come through this agency.

\* \* \* \* \*

Respectfully,

CLARA BLISS HINDS.

O. M. VAUGHAN, M. D.

COVERT, Mich., Jan. 27, 1888.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sir:—The Underwear that I purchased of you has proved entirely satisfactory. I find it just the thing in this climate where sudden changes in the temperature are almost a daily occurrence.

I seldom wear an overcoat except when riding. Indoors I only wear a light summer coat. The Underwear keeps one warm.

Very respectfully,

O. M. VAUGHAN.

H. A. HAMILTON, M. D.

PERRYSBURG, Ohio, Feb. 21, 1888.

MR. J. JAROS.

Dear Sir:—In every instance in which I have recommended the JAROS HYGIENIC UNDERWEAR it has been highly satisfactory, answering all the indications claimed for it.

Respectfully,

H. A. HAMILTON,

CASPER BARSTOW, M. D.

EAST HARTFORD, Conn., Jan. 26, 1888.

MR. JAROS.

Dear Sir:—After wearing the *Jaros Hygienic Wear* thus far during the winter, I take pleasure in speaking of its merits.

I consider it *the best* kind of underwear ever made. Never having been able to wear any kind of woolen underwear before on account of the irritation it produced, I was made glad when I found that the *Jaros Hygienic Wear* did nothing of the kind. The principles of the goods is one of the best.

I experience no chilly feeling now when going from a heated room and into the cold wind, as I always did with any other underwear.

The fitting of the garment is another great feature, it being the same after repeated washing, so unlike any other woolen garments.

Respectfully yours,

CASPER BARSTOW.

ROBT. STEVENSON & CO., 92 and 94 Lake Street.

J. JAROS, ESQ.

CHICAGO, Dec. 1st, 1886.

Dear Sir:—Two years ago I was prostrated by intercostal neuralgia. My physician—Dr. W. H. Denslow Lewis, of Hyde Park—prescribed your underwear, which I have worn ever since, both summer and winter.

They afford me great comfort, and have thus far warded off all neuralgic symptoms, although my duties compel me to sit in a draft much of the time.

Sincerely yours,

I. GILES LEWIS.

H. M. BINGHAM, M. D., 170 Juneau Ave.

MILWAUKEE, Dec. 31, 1887.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gents:—In two cases of chronic disease I have seen a very good effect from the *Jaros* Underwear, and I am in the habit of recommending this wear to all my patients, and in lectures to students.

H. M. BINGHAM.

GEO. HOMAN, M. D., Prof. Hygiene, Surgeon Police Department, St. Louis.

St. LOUIS, Mo., Jan'y 20, 1888.

J. JAROS, ESQ., Chicago, Ill.

Dear Sir:—I am enabled by personal experience to testify to the comfort derived from the use of your Wear during the cold weather, and that the anticipated objection occurring to me before trial, namely, that the unmixed wool in contact with the skin might prove uncomfortable, has not appeared. In softness and warmth I have never worn any fabric that equals it, while my original impression at first sight in regard to the scientific construction of the principals upon which it is based, has been strengthened by experience.

Very truly yours,

GEO. HOMAN.

R. HARVEY REED, M. D., Surgeon Chief, Baltimore & Ohio R. R. Co., Secretary State Sanitary Association, Ohio.; Treasurer National Association Railway Surgeons.

MANSFIELD, O., March 9, 1888.

MR. J. JAROS, Chicago, Ill.

Dear Sir:—From personal experience I find your Underwear the most comfortable and the best safeguard from taking cold of anything of the kind I have ever seen.

I have no hesitancy whatever in heartily seconding it for Railroad employees, Police and Fire Departments, as especially well suited for their use, or any person exposed to the sudden changes of the weather in our climate.

Yours very truly,

R. HARVEY REED, M. D.

J. E. HARRIS, M. D.

AUXVASSE, Mo., Feb. 5, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen:—It gives me great pleasure to say that after having tried your wear I find it affords an admirable protection from cold, and so far as preserving the warmth of the body is concerned, I regard it useful as a prophylactic and therapeutic agent.

Yours truly,

J. E. HARRIS, M. D.

JAMES COLLINS, M. D., 704 Franklin Street.

PHILADELPHIA, PA., Feb. 5, 1889.

JAROS HYGIENIC UNDERWEAR CO.

Gentlemen:—It affords me pleasure to state that I have found your underwear elastic, pleasant and durable. Especially is this wear indicated where there is a disposition to active perspiration, as the peculiar arrangement of the fibres of the wool prevents the surface of the body from continuing damp and sticky.

Yours truly,

JAMES COLLINS, M. D.

FRANK B. GOLLEY, M. D., 116 Grand Avenue.

MILWAUKEE, WIS., Jan. 31, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen:—The underwear purchased of you for use in my family has been a source of great comfort. The usual so called cold taking and chilliness incident to our changeable climate has, I am glad to say, failed to appear since your goods were used. Shall recommend them wherever opportunity affords.

Respectfully,

F. B. GOLLEY, M. D.

F. B. KELLOGG, M. D.

NEW HAVEN, CONN., Mar. 25, 1886.

I have tried the Jaros Hygienic Wear in my practice and consider it superior to anything I have seen for maintaining the surface of the body at an equable temperature. It is a safeguard against sudden chills, and hence of great service to sensitive temperaments in a changeable climate.

Yours truly,

F. B. KELLOGG, M. D.

G. E. ABBOTT, M. D.

BRYN MAWR, PA., Feb'y 13, '89.

JAROS HYGIENIC UNDERWEAR CO., Chicago Ill.

Dear Sir:—After careful personal examination, I do not hesitate to recommend your wear. It fulfills the demands of Hygiene and of comfort. I have found it of great service as a therapeutic agent in cases in which there is want of nervous or vascular tone—prevalent complaints in this climate. Also in chronic diseases and general enfeeblement when it is essential that the peculiar susceptibilities to changeable climatic conditions should be guarded against.

Yours truly,

G. E. ABBOTT, M. D.

S. D. KENNEDY, M. D.

ANNAPOLIS, Md., July 15th, 1890.

MR. I. JAROS.

Your communication of July 1st received. In three cases in which I have had occasion to note the use of the "Hygienic Underwear," it seems to have accomplished all that is claimed for it as a remedial agent.

Very respectfully,

S. D. KENNEDY.

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ASA HERR, M. D., 1131 Main Street.

DUBUQUE, IOWA, May 19th, 1890.

TO MR. I. JAROS, Chicago, Ill.

Your underwear has been prescribed by me in a number of cases in which I considered proper protection important. In rheumatic cases I have found it of special benefit, as also in pulmonary and kidney affections.

My decided conviction is that its use will prove materially advantageous in connection with other treatment in such cases. The body is thereby protected from sudden chilling under climatic changes, and that is most important. I shall take pleasure in continuing to prescribe your "Hygienic Underwear," and hope your further endeavors will meet with the success it deserves.

Yours very truly,

ASA HERR, M. D.

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H. D. DIDAMA, M.D., LL.D., Dean of the College of Medicine, Syracuse University.

SYRACUSE, July 3d, '90.

DEAR MR. JAROS.

I have commended your Hygienic Wear because I regard it as the best in the market.

It is specially useful for asthmatics, and for those who suffer from bronchial catarrh, because it protects from sudden and often disastrous changes of atmospheric temperature. And then it is so unirritating and comfortable and delightful to the wearer.

Yours truly,

H. D. DIDAMA, M.D., LL.D.



A. L. TALMAGE, M. D., 8 Park Street.

NEW HAVEN, CONN., 4-20-89.

Gentlemen:—The Jaros Hygienic Underwear gives me entire satisfaction, and I cheerfully recommend it.

Respectfully,

A. L. TALMAGE, M. D.

J. H. TILDEN, M. D.

WICHITA, KAN., Feb. 6, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen;—Your Hygienic wear is all you represent it to be. Those for whom I ordered suits are well pleased, and say they will not dispense with same, and signify their intention of ordering again when they need. It is a therapeutic and prophylactic agent, and every one ought to know of your wear, and wear it.

Respectfully,

J. H. TILDEN, M. D.

DR. A. CRAWFORD.

MILES, IOWA, Feb'y 2, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen:—I have this to say about your wear. It has been tested both by myself and a number of my patients, for over two years, and always with the most satisfactory results. The durability of these goods is beyond my expectations. I do not expect to wear any other, nor change in my recommendations while these are on the market.

Respectfully yours,

A. CRAWFORD, M. D.

JOHN W. FLICK, M. D.

HONEOYE FALLS, N. Y., Feb'y 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sirs:—While I do not believe in the practice of recommending to others everything or anything you like yourself, I must make an exception to the rule in the case of your Hygienic Underwear. For years I have had difficulty in finding the right quality of underwear for myself, always trying my best to secure the best in the market, but oftener disappointed than pleased. The goods of your manufacture please me in every respect, and all to whom I have recommended them speak in the highest terms of them. There is no doubt in my mind but that many of our winter diseases and ailments could be avoided, and others easier cured, by the use of these undergarments. You have my best wishes for success.

Truly yours,

J. W. FLICK, M.D.

E. L. R. THOMSON, 1162 Chapel St.

NEW HAVEN, CT., April 18, 1889.

Gentlemen:—Permit me to add a word to the many which you have undoubtedly already received in favor of the Jaros Hygienic Underwear. I have worn them for two winters and one summer and am happy to express myself as perfectly satisfied with them, for I find they more fully meet my requirements than any other underwear now upon the market. It is enough for me to say that my experience with them has proven conclusively to me that they possess all the properties ascribed to them by the makers.

Yours very truly,

E. L. R. THOMSON.

J. F. MERRY, General Western Passenger Agent, Illinois Central Ry.

MANCHESTER, IA., Oct. 6, 1888.

JAROS HYGIENIC UNDERWEAR CO., Chicago.

Gentlemen:—I am not in the habit of giving testimonials, and as a rule am opposed to any thing of the kind, but after suffering from rheumatism and kindred diseases for several winters, I was persuaded by a friend to try Hygienic Underwear, and I am compelled to say that from the time I began using them last November until spring I did not have a touch nor a single chill during the entire winter, and I am confident that it was attributable to the use of your Underwear, and I have not hesitated to recommend them at every opportunity.

\* \* \* \* \*

Yours truly,

J. F. MERRY,

Gen'l Western Passenger Agent.

In a letter to a friend, Mr. Merry wrote at the time of receiving the Underwear as follows.

MANCHESTER, IA., Dec. 1, 1886.

Going home yesterday to dinner, I found awaiting me a suit of underwear, and I was not very long in putting myself inside of them, but with no idea that I could wear them, having tried almost everything that contained wool, but never having found a garment I could wear next to my skin containing a particle of wool. I have worn the suit for two days without an unpleasant sensation; on the contrary, they are delightful, and just what I needed.

Please have the following order filled for me.

\* \* \* \* \*

Yours truly,

J. F. MERRY.

GEO. P. CARPENTER, M.D.

CEDAR RAPIDS, IA., May 20, 1890.

I have examined the Jaros Hygienic Underwear, and consider it the most perfect protection from severe cold and changes in temperature that I ever saw. Especially will this underwear be useful for those afflicted with rheumatism, lung troubles, or a dry condition of the skin. If the actual use of these goods substantiates the theory I have formed, they will be a valuable aid in the treatment of diseases, as well as to the comfort of the wearers.

Respectfully,

TO I. JAROS.

GEO. P. CARPENTER, M.D.

Among others we refer also to the following medical gentlemen regarding the Therapeutic and Prophylactic value :

- Dr. Adair, J. W., Massilon, Ohio,
- " Bingham, H. M., Milwaukee, Wis.,
- " Blodgett, Youngsville, Pa.,
- " Barnes, G. W., San Diego, Cal.,
- " Beers, J. E., Ithaca, N. Y.,
- " Barber, L. P., Tracy City, Tenn.,
- " Clements, J. M., Oxford, Pa.,
- " Cleveland, N. B., Chicago, Ill.,
- " Clairebone, Herbert, Petersburg, Va.,
- " Crain, M., Rutland, Vt.,
- " Franks, Geo. K., Burton, W. Va.,
- " Garth, Thomas, Clarion, Ia.,
- " Hollister, Chicago, Ill.,
- " Hood, T. B., Washington, D. C.,
- " Heizman, C. L. (U. S. A.), West Point, N. Y.,
- " Leeds, L. L., Lincoln, Ill.,
- " Lowring, Valpariso, Ind.,
- " Morgan, Dudley, Washington, D. C.,
- " Moore, A. V., Ambia, Ind.,

- Dr. Porter, M. G., Lonsaconing, Md.,  
“ Pierce, N. H., Chicago, Ill.,  
“ Sutton, K. P., Lewisburg, Ky.,  
“ Tye, Geo. A , Chatham, Canada,  
“ Vaughan, O. M., Coverts, Mich.,  
“ Woodward, A. W., Chicago, Ill.,  
“ Weems, E. W., Spokane Falls, Was.,  
“ Young, H. B., Burlington, Ia.,  
“ Yonkey, W. P., Rossville, Ind.,  
and many others.
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# FOLLOWING REPORTS

FROM

Equipment Branch, U. S. Army,

Pay Inspector's Department, U. S. Navy,

Police, Fire Departments,

Railroad Companies, Etc.



# NATIONAL ASSOCIATION FIRE ENGINEERS.

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PROCEEDINGS SIXTEENTH ANNUAL CONVENTION.

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MINNEAPOLIS, MINN., Aug. 15, 16, 17 and 18, 1888.

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REPORT OF COMMITTEE ON EXHIBITS.

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*To the President and Members of the National Association Fire Engineers.*

GENTLEMEN :

The undersigned Committee on Exhibits begs leave to submit the following as their report:

THE JAROS HYGIENIC UNDERWEAR FOR FIREMEN.

Underwear is a prime factor in acting as a guard against influences from without, and if of a properly constructed material, must tend much toward raising the efficiency of men in service, and thereby increase the standard of an already progressive department. The material—the Jaros Hygienic Wear—is a combination of unspun wool knitted into the meshes of a spun



cotton fiber. This is after the recommendation of most eminent medical scientists in America and Europe. The wool unspun, worn next the body, acts as a cutaneous stimulant (guarding against irritation so often apparent with spun fiber), the body temperature being stored between the individual fibers, prevents the cold from directly striking the body from without (acting like double casement windows in a house), and, therefore so valuable when men are forced to sudden changes from in-doors to the cold of out-doors. The wool, again, absorbs moisture from the body, and transports it readily to the outer framework of cotton, thereby protecting against the possibility of wet clothing next the skin to chill the surface at every change in temperature. The cotton framework without, makes the material two-fold in its action; for while the wool has a power of absorption of moisture, the cotton has that of attraction and retention, so that any perspiration exuded from the body is taken up by the cotton from the wool and retained, while any water from without striking the cotton surface is attracted and retained, and prevented from penetrating through to the body. With all this, the material is porous, and does not therefore, retard the poisonous exhalations from passing off. The material is as nearly non-shrinkable as can be claimed of any material, owing to the cotton back, thereby having an underwear which will fit properly at first as well as last. No laps or folds to allow air to circulate next

the body are apparent, where the consideration of shrinkage is discarded (which is the case with wear of spun wool, whether knitted or woven.) The wear is also more durable. The cost within the line of good woolen underwear. With a due consideration of all the scientific as well as practical facts and experiences, the Surgeon-General of the United States Army recommended the wear to the Quartermaster-General, War Department, U. S. Army, and the result of experience by men and officers has given this underwear prominent place under the equipments of the Northwestern posts. They also point with great pride and satisfaction to the service among Police and Firemen in such cities where practical application has been made. They feel assured that the consideration of this subject, though comparatively new with the chief officers of our departments, will gain a hearing, with the view of raising the condition of the men.

Your Committee, upon examination, would recommend it for your consideration.

Very respectfully submitted,

Chief, Providence, R. I. - - G. A. STEERE,

“ Macon, Ga. - - - - L. M. JONES,

“ Springfield, Mass. - - A. P. LESHURE,

“ New Albany, Ind. - C. T. MATTHEWS,

“ New Orleans, La. - - THOS. O'CONNOR,

Committee.

## CHICAGO FIRE DEPARTMENT.

Through introduction of Dr. O. C. DeWolf, Commission of Health, to Chief Swenie, of Fire Dept., the following report was the result with the men of 1st Battalion with the extra heavy fleecy wear:

JOHN REDELL, Chief of 1st Battalion, C. F. D.

Fire Department of the City of Chicago,  
CHICAGO, ILL., Feb. 17, 1886. }

J. JAROS, Esq.:

Sir:—Having become interested in the results from wearing your underwear by myself and my men, I am pleased to state their own experience, which is satisfactory in *every particular*, as to protection against the cold and changeable temperature; raising the general condition of the body, and maintaining an even temperature under all the trying conditions; does *raise their efficiency*. Personally, I can corroborate the good effect from wear, through the most trying conditions.

Very respectfully,

JOHN REDELL.

## FROM CHICAGO FIREMEN—CAPTAINS OF COMPANIES.

This document, signed by Captains of different companies, was made for the purpose described, in the interest of the Officers and Firemen of those and other companies.

CHICAGO, June 10, 1888.

JAROS HYGIENIC UNDERWEAR CO.

Gentlemen:—After thorough application of your Hygienic Underwear for a time sufficiently long to testify to its superiority for firemen during climatic changes in winter, we are satisfied of its filling all claims you make.

We are desirous of further adoption, and respectfully beg you to make such arrangements as will gain for us your next season's contract price.

Thanking you for your endeavors in our interest we have the honor to be

Yours respectfully,

ROBERT PALMER,	Captain Engine No. 1.	1.
CORNELIUS MANNING,	" " " "	6.
JOHN HENNESSY,	" " " "	13.
E. C. ANDERSON,	" " " "	17.
JOHN FITZGERALD,	" " " "	19.
MICHAEL R. DRISCOLL,	" " " "	32.
MICHAEL EHRET,	" " " "	42.
NICHOLAS WEINAND,	" " " "	14.
JAMES HEANEY,	" " " "	5.
JOHN LYNCH,	" " " "	18.
DAVID J. MAHONEY,	" " " "	29.
HENRY GREENHOFF,	" " " "	11.
JOHN COOK,	Captain Hook and Ladder No. 2.	2.
ISIDORE P. SMITH,	" " " "	9.
PATRICK DOYLE,	" " " "	5.
F. J. RIESS,	" " " "	3.

Etc., Etc., Etc.

REPORT OF FIRE MARSHAL TO THE CITY COUNCIL  
OF THE CITY OF CHICAGO, FOR THE FISCAL  
YEAR ENDING DECEMBER 31, 1888.

In the report of Chief Swenie on the health of Department, the following is stated:

"Compared with previous years the mortality of the Department during the past year has been light."

BOSTON FIRE DEPARTMENT.

JOHN W. REGAN, Ass't Chief.

Boston Fire Department,  
BOSTON, May 23, 1889. }

JAROS HYGIENIC UNDERWEAR Co., Chicago, Ill.

MR. JAROS—Dear Sir:—There has been so great a progress in the excellence of service in our Fire Department that it is safe to say we are now at a time when it is necessary to consider matters that will preserve the good condition of our working forces (the firemen).

The work you are doing in this direction deserves encouragement with Fire Departments; for a recount of the value of proper underwear comes strikingly before us after the use of the "Jaros Hygienic Underwear." The experience of our men has been very satisfactory indeed in every manner, protecting against the dangerous influences of the extremes that a fireman must suffer in winter. My first impulse was to consider the claims you made as exaggerated, but a few facts which are my experience will illustrate to you how fully this underwear meets the ideals for protection.

I have been a sufferer of rheumatism for many years, contracted in service. Since I have worn your underwear it has not troubled me at all, though I have been subjected to trying service the last winter.

On Saturday evening, the 6th of October, 1888, I put on your underwear. It was cold and wet, typical New England weather. We had a fire in a six-story building on the water front lasting four hours. I came out of it with the water coming out of the tops of my rubber boots, *completely wetted through*, so that I had to undress in the yard of my dwelling when I got home. No ill effects were the result of that; when otherwise I would have cough, cold, and surely rheumatic attacks.

About November 15th we had a very bad fire and had to fight it three flights before we got to the top, the sixth story. Usually I get wet at a fire. In this I did not, but instead I became thoroughly overheated from

wearing a very heavy pilot cloth coat and the result was, that I got *sweated through and through*. I did not get home until 3 o'clock in the morning (nearly six hours), but I *felt splendid*. With other underwear, best woolen, I always experienced a cold wet sensation under similar circumstances, down my back, and generally miserable until I could make a change.

This I consider the most important test for firemen and I feel more than ever that the "Jaros Hygienic Underwear" fills a long felt want in Fire Departments. I cheerfully say: I would not be without it and many of our men join me in this and say money cannot buy it from us.

Wishing you further success in the introduction of a truly meritorious article and one based on scientific principles, I am

Yours truly,

JOHN W. REGAN, Ass't Chief.

### NEW HAVEN, CONN., FIRE DEPARTMENT.

Headquarters New Haven Fire Department, {  
Office, No. 15 City Hall. }

Gentlemen:—The "Jaros Hygienic Underwear" furnished by your firm to a large number of the members of the New Haven Fire Department for winter wear has given very general satisfaction. Many of the men who have practically tried them, express themselves highly pleased and state, that they would not wear anything else as a substitute if the cost was much higher than what they paid for them.

They are no doubt of great value as a protection against the sudden changes in our climate and proof against taking cold.

Very respectfully,

A. C. HENDRICKS, Chief Fire Dept.

### BRIDGEPORT, CONN., FIRE DEPARTMENT.

BRIDGEPORT, CONN., April 16, 1889.

Dear Sir:—The "Jaros Hygienic Underwear" furnished by you to myself and the officers and members of the Bridgeport, Conn., Fire Department have proved *all* you recommended of them, and I think no fireman should be without them.

Respectfully yours,

CHAS. A. GERDENIER, Chief Fire Dept.

## CITY OF CLEVELAND, OHIO.

Office Board of Fire Commissioners,

AUGUST 25, 1890.

A. J. SPENCER, Secretary.

MR. I. JAROS, New York.

Dear Sir:—A thorough examination of the "Jaros Hygienic Underwear" has proven to me the correctness of the scientific theories upon which it is based. In view of the necessity of a most thorough protection for firemen to guard against the influences of weather and service, I have taken particular interest in going into the details of what this Underwear will accomplish. The reports from other departments place this Underwear as an important requirement of their clothing, and my impression is that the benefits to men in service in this department will be marked. From the mention made by Chief Dickinson on the value of this Wear my opinion is fully borne out.

Very respectfully,

L. L. TRAVIS, M.D.,

Surgeon Cleveland Fire Dept.

## FIRE COMMISSION OF DETROIT, MICH.

Office of the Secretary, }  
August 21, 1890. }

MR. JAROS.

My Dear Sir:—In reply to your inquiry relative to the benefits derived by our men from the use of your Wear, I beg to state that I have yet to learn of a single case of illness due to exposure of any man who has worn these garments. They were introduced into this Department about three years ago, and quite generally adopted by our men. As I have said, our records do not show that a man was obliged to go off duty during any cold months of the year on account of sickness. I know of several who did not get the Wear who were ill, and purchased it later on account of the good words said of it by their comrades. The Wear is very popular in this Department, and from what our men tell me, they prefer it to any other.

Very truly yours,

JAMES E. TRYON, Secretary.

## FIRE DEPARTMENT, CITY OF ST. PAUL.

ST. PAUL, Minn, Jan. 1, 1890.

MR. I. JAROS.

Dear Sir:—The Jaros Hygienic Underwear has been in use with us for last three seasons, and I can highly recommend it to all Fire Departments, as this underwear is considered by us as the best possible protection against cold and changeable temperatures, which are especially characteristic of this latitude, and its use has resulted in great protection of health and a corresponding increased efficiency, and I find them the most desirable article I have ever seen for the object to be attained.

Very truly yours,

JOHN JACKSON,

Chief Engineer.



## OMAHA, NEB., FIRE DEPARTMENT.

Office of Chief Engineer Omaha Fire Department,  
OMAHA, NEB., Feb. 21, 1887. }

J. JAROS, Esq., Chicago, Ill.

Dear Sir:—With regard to the "Jaros Hygienic Wear," extra heavy fleece, I can say they have given eminent satisfaction among the number of members of the Omaha Fire Department, who have found it very comfortable in the biting blasts of winter, while fighting fire in exposed streets. These impenetrable undergarments are just the necessity for men whose calling keep them out doors in winter and at nights, and they will certainly meet with approval by all who try them in rigorous weather, as they were unanimously commended by my brave fellows in this metropolis of the Upper Missouri.

Yours respectfully,

J. J. GALLIGAN,  
Chief Fire Dept.

The Underwear has been largely used in the following Fire Departments, and the reports received from the men are satisfactory.

NEW YORK CITY, N. Y.	MILWAUKEE, WIS.
BROOKLYN, N. Y.	ST. PAUL, MINN.
HARTFORD, CONN.	MINNEAPOLIS, MINN.
NEWARK, N. J.	EVANSVILLE, IND.
DETROIT, MICH.	HYDE PARK, ILL.
GRAND RAPIDS, MICH.	TOWN LAKE, ILL.

## CHICAGO POLICE DEPARTMENT.

INSPECTOR OF POLICE, City of Chicago,

CHICAGO, January, 1889.

On the recommendation of Dr. Henrotin, Surgeon of Police and Fire Departments, to Chief and Inspector of the Chicago Police Department, the "Jaros Hygienic Underwear" was brought to the notice of the members of the force, and has been used for a number of years with greatest satisfaction. The consideration of personal Hygiene to raise the efficiency of policemen, is gaining more general attention by Heads of Departments, and my personal observation as Inspector of this force is corroborative of, the necessity of regarding the question of clothing for officers; especially during the inclement and cold seasons, from October 1st to April 1st, when disabilities arise from exposure, which result in pulmonary and kidney troubles and rheumatic affections.



The "Jaros Hygienic Underwear" has proven a most efficient guard, raising the condition of the men, and bearing out fully the recommendations of Dr. Henrotin. My personal experience is corroborative of this. Proper underwear makes an overplus of outer clothing, which is debilitating for men in service, unnecessary. I take pleasure in giving my opinion, and the result of experience with our men, and do not doubt that the underwear, when applied, will assert its worth in all the claims that are made for it.

JOHN BONFIELD, Inspector of Police.

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### ST. LOUIS POLICE DEPARTMENT.

Office of Board of Police Commissioners, Four Courts,  
ST. LOUIS, MO., Feb. 3, 1888.

CHIEF OF POLICE.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sirs:—From experience of men now using your Wear, it is indeed satisfactory. The Wear is all that you claim for it, and cannot fail of further adoption.

Very truly yours,

FRANK R. TATE, Secretary.

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### ST. LOUIS POLICE DEPARTMENT.

GEO. HOMAN, M. D., Prof. Hygiene.

SURGEON POLICE DEPARTMENT. St. Louis.

ST. LOUIS, MO., January 20, 1888.

J. JAROS, Esq., Chicago, Ill.

Dear Sir:—I am enabled by personal experience to testify to the comfort derived from the use of your Wear during the cold weather, and that the anticipated objection occurring to me before trial, namely, that the unmixed wool in contact with the skin might prove uncomfortable, has not appeared. In softness and warmth I have never worn any fabric that equals it, while my original impression at first sight in regard to the scientific construction of the principals upon which it is based, has been strengthened by experience.

Very truly yours,

GEO. HOMAN, M. D.

**DETROIT POLICE DEPARTMENT.**

Accepted by advice of Dr. Book, Surgeon of Police Department, to Police Commissioners, Dec. 29, 1886.

**JAMES E. PITTMAN**, Superintendent of Police.

SUBJECT, "JAROS HYGIENIC WEAR."

Metropolitan Police Department,  
Superintendent's Office, DETROIT, MICH. April 22, 1887. }

**MR. J. JAROS**, Chicago.

Dear Sir:—I take pleasure in stating that the members of this department who used your undergarments (ex. heavy fleece) during the past winter, are unanimous in expressions of approval and satisfaction. They proved to be fully as efficacious for comfort, and protection against cold and change of temperature, as was promised for them. I have no doubt that the use of these garments, which was limited (it being first season) during the past winter, will be greatly extended in this department in the future.

Respectfully,

**JAMES E. PITTMAN.**

The Detroit Departments are now generally using the Underwear. The satisfaction and benefits from continued use being more marked.

**WASHINGTON, D. C., POLICE DEPARTMENT.**

Headquarters of the Metropolitan Police,

WASHINGTON, D. C., Sept. 29, 1887.

**JAROS HYGIENIC UNDERWEAR CO.**, Chicago, Ill.

Gents:—I beg to say, in reply to your inquiry, that the Surgeons of this Department made a very favorable report upon the Underwear of your manufacture.

Very respectfully,

**W. G. MOORE**, Major and Supt.

**MINNEAPOLIS, MINN., POLICE DEPARTMENT.**

Minneapolis Board of Police Commissioners,

MINNEAPOLIS, MINN., March 20, 1889.

**JAROS HYGIENIC UNDERWEAR CO.**, Chicago, Ill.

Gentlemen:—I have talked with nearly every man in our Department that is using your Underwear; also with a number of members of the Fire

Department. Every man is emphatic in pronouncing your Underwear vastly superior to anything ever used by them before. You will undoubtedly continue placing the goods with our Department. Personally I wish to say, that I have tried most of the standard makes of Underwear, but I never wore anything that gave me such perfect satisfaction and uniform comfort as your goods.

This is not written on your solicitation.

Very respectfully,

H. A. NORTON,

Sec'y Board Police Commissioners and Mayor's Sec'y.

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## **POLICE DEPARTMENT OF THE CITY OF MINNEAPOLIS.**

MINNEAPOLIS, MINN., Aug. 17, 1888.

(Report.)

**DR. E. S. KELLEY**, Surgeon of Police.

In a recount of the benefits derived by the policemen of our Department last winter, I have found a full confirmation of the claims made for the "Jaros Hygienic Underwear." The peculiarly cold and persistent changes of temperature made the last season trying for the physical condition of our officers; added to this a class of winter cholera prevailed here, which was very debilitating. The observations have been that all the men who wore the "Jaros Hygienic Underwear" were free from these attacks, and maintained a normal condition throughout.

**E. S. KELLEY**, M. D., Police Surgeon.

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The Underwear has been largely used in the following Police Departments, and the expressions of the men are satisfactory.

**NEW YORK CITY**, N. Y.

**BROOKLYN**, N. Y.

**BROOKLYN AND NEW YORK BRIDGE POLICE.**

**NEWARK**, N. J.

**HARTFORD**, CONN.

**NEW HAVEN**, CONN.

**ST. PAUL**, MINN.

**TOWN LAKE**, ILL.

**CHICAGO PARK POLICE.**

**REPORT EQUIPMENT BOARD, U. S. ARMY.**

War Department, Quartermaster General's Office.  
WASHINGTON, D. C., Sept. 13, 1887.

Board met this day.

Present:— Col. Chandler and Capt. Rodgers.

After carefully examining the Wool Fleece Underwear submitted by MR. JAROS, of Chicago, and having read his testimonials in its favor, the Board begs leave to report that this underclothing possesses considerable merit and would, doubtless, prove very acceptable to troops serving in high latitudes.

\* \* \* \* \*

(Official Copy.)

JOHN RODGERS, Capt. & M. S. K., U. S. A.

War Department, Quartermaster General's Office,  
WASHINGTON, D. C., Sept. 20, 1887.

MR. J. JAROS, Chicago, Ill.

Sir:—In compliance with your request of the 17th inst., I herewith inclose a copy of the report of the Equipment Board of this office upon the Fleece Underwear presented by you for the examination of this Department.

I have no objection to the publication of said report.

Very respectfully, your obedient servant,

S. B. HOLABIRD, Quartermaster-Gen., U. S. A.

**FORT ABRAHAM LINCOLN, DAK.**

JOHN H. PAGE, Major 11th Infantry, U. S. A.

United States Army, War Department,  
FORT ABRAHAM LINCOLN, Dakota, Jan. 20, 1886.

MR. J. JAROS, Chicago, Ill.

Sirs:—Your heavy wear I have named "Blizzard" Underwear, after wearing a suit myself, with the mercury 27 degrees below zero, with a twenty-mile wind, I was perfectly comfortable, and felt a warm glow of the skin during the whole trip. My ambulance driver reports his experience with the thermometer 35 degrees below zero, and in a heavy gale, saying the drawers were much warmer than two pairs of very heavy woolen drawers he had been wearing, and that he did not feel the cold in the slightest degree. We found it washed as well as any woolen goods, and did not shrink. I am fully convinced of the excellent qualities of your goods, and find them doing good service. I will request the other officers to report to you also.

Very respectfully,

JOHN H. PAGE, Maj. U. S. A.

**FORT MEADE, DAK.**

CAPT. F. M. McDOUGALL, 7th Cavalry, U. S. A.

FORT MEAD, DAK., Nov. 28 1886.

MR. J. JAROS, Chicago, Ill.

Dear Sir:—The Fleece Underwear of your make is fulfilling every expectation, and I am personally also deriving the benefits and enjoying its wear.

Respectfully,

F. M. McDOUGALL, Capt. U. S. A.

**OFFICE A. A. QUARTERMASTER.**

FORT YATES, DAK., 4, 12, 1887.

J. JAROS, Esq., Jaros Hygienic Underwear Co., Chicago, Ill.

Dear Sir:—I can assure you that I am only too happy to furnish you all information you desire relative to your heavy underwear. I have been in this country for several years and have tried all grades of heavy fabric, never found any to meet my wants until I got your goods. Your heavy underwear can in no way be surpassed. I have been out in the hardest blizzards known in this country, with the wind at 29 miles, and the mercury at 46 and 47 degrees below zero, but found myself comfortable; felt a warm glow of the skin at all times, and I find it washes as well as any ordinary woolen wear, and does not shrink. I am fully convinced of the excellent qualities of your goods, and find that a great many of my friends and others are *very* anxious for winter to come again so that they may order. As I find it a protection against all diseases during the cold and damp seasons, having proven this last winter, I will request many of my comrades to report to you also.

I am, Sir, yours very respectfully,

PETER BRILLING, U. S. A.

**U. S. NAVY, PAY INSPECTOR'S DEPARTMENT.**

U. S. Naval Academy,

ANNAPOLIS, MD., Feb. 23, 1889.

Gentlemen:—I cannot refrain from expressing to you the great satisfaction and enjoyment I have received from the use of your Jaros Hygienic Underwear during the past winter. I have been almost free from rheumatic pains, from which I have heretofore suffered greatly, and also enjoyed an exception from severe colds, which is a very unusual luxury with me in the winter season; all of which I must attribute to the protection afforded by my Hygienics. I am also gratified to find that with the proper care in washing there is no perceptible shrinkage. In short, in

every way, I find them the most desirable article I have ever seen for the object to be attained.

I shall be so loth to part with them that I hope you will manufacture a lighter grade for summer wear.

You are at liberty to make any use you may see fit of my testimony.

Very truly yours,

THOS. T. CASWELL,

Pay Inspector U. S. Navy.

### CHICAGO CITY RAILWAY CO.

C. B. HOLMES, Pres't and Supt.,

2020 State Street,

CHICAGO, March 2, 1889.

Gentlemen:—The "Jaros Hygienic Underwear" has been in use with Conductors and Gripmen of this Company since November 1885, having been recommended by the Company's Surgeon, Dr. D. A. K. Steele. We speak for the men in asserting that this underwear is considered the best possible protection against cold and changeable temperatures, which are especially characteristic of this latitude, and its use has resulted in great protection of health and a corresponding increased efficiency. With conductors, whose occupation necessarily prevents the wearing of a very heavy overcoat, it is of great advantage, and gripmen and drivers are enabled to thoroughly protect themselves in their exposed positions without an overplus of clothing, otherwise necessary.

The proper protection of men serving in Street Railway Companies is of the greatest importance; since an efficient service in trying weather is largely dependent on their prompt response. We have been pleased to secure for our employees a contract figure on the "Jaros Hygienic Underwear," and feel that the benefits fully justify us in our continuance of this arrangement.

Respectively yours,

C. B. HOLMES, Supt.

D. A. K. STEELE, M. D., Surgeon and Consulting Physician, Chicago City Railway Co., Ex-President Chicago Medical Society, Prof. Orthopedic Surgery, College of Physicians and Surgeons of Chicago, etc.

J. JAROS, Esq., Chicago.

CHICAGO, January 6, 1886.

My Dear Sir:—I have critically examined and practically tested the "Jaros Hygienic Wear," and consider it the best fabric with which I am acquainted, for retaining the animal heat, and preventing chilling of the



body by sudden changes of temperature. I consider the heavy wear especially valuable for car drivers, firemen, policemen, or those whose occupation expose them constantly to the inclemency of the weather.

Through my suggestion to the officials of the Cable Railway Company, many of the Grip Drivers and Conductors are already using this wear with the greatest satisfaction, lessening their risk of "taking cold," and bettering their HEALTH and EFFICIENCY.

Very truly yours,

D. A. K. STEELE, M. D.

### WEST CHICAGO STREET RAILWAY CO.

CHAS. F. NAGL, Superintendent.

CHICAGO, March 4, 1889.

Gentlemen:—The good reports from Drivers and Conductors of our Company who are wearing the "Jaros Hygienic Underwear," satisfies us that the arrangements made for last season's delivery of the wear have been appreciated.

The excellent protection under every change of temperature during the winter months, guards against attacks so frequent with men exposed, of rheumatism, kidney disease, and pulmonary troubles, and all character of ailments resulting from colds. This is too often cause for irregularities with men, which is a loss to them and often an inconvenience to the Company.

We believe the underwear good, and just the thing for the purposes it is advocated.

Respectfully,

CHAS. F. NAGL, Supt.

F. P. SARGENT, Grand Master.

Grand Lodge Locomotive Firemen of North America,  
TERRE HAUTE, IND., March 5, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen:—I take pleasure in recommending the Hygienic Underwear. I have been wearing it constantly for the past two winters and I find it not only conducive to comfort but to good health, and I recommend it heartily to any one who desires to be free from chills and rheumatism and to those who are exposed to sudden changes of climate. *Railroad* men will not only find that the Jaros Underwear gives them comfort but also good health.

Yours truly,

F. P. SARGENT.



EUGENE V. DEBS, Grand Sec'y and Treas.

Grand Lodge Brotherhood of Locomotive Firemen. }  
TERRE HAUTE, IND., Feb. 12, 1888. }

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Gentlemen:—After two years' experience with your Hygienic Underwear I take great pleasure in bearing testimony to its worth. It is all you claim for it and I conceive it to be just what every railroad man in the train service should be equipped with, if he has a prudent appreciation of health and comfort.

Yours very truly,

EUGENE V. DEBS.

### ILLINOIS CENTRAL RAILROAD COMPANY.

Office of General Western Passenger Agent, }  
MANCHESTER, Iowa, October 6, 1888. }

JAROS HYGIENIC UNDERWEAR CO., Chicago.

Gentlemen:—I am not in the habit of giving testimonials, and as a rule am opposed to anything of the kind, but after suffering from rheumatism and kindred diseases for several winters, I was persuaded by a friend to try Hygienic Underwear, and I am compelled to say that from the time I began using them last November until spring I did not have a touch nor a single chill during the entire winter, and I am confident that it was attributable to the use of your Underwear, and I have not hesitated to recommend them every opportunity.

\* \* \* \* \*

Yours truly,

J. F. MERRY,

Great Western Passenger Agent.

J. F. MERRY, General Western Passenger Agent, Illinois Central Railroad Company,

Office of General Western Passenger Agent, }  
MANCHESTER, Iowa, May 7, 1887. }

J. JAROS, Esq.

My Dear Sir:—I have worn the "Jaros Hygienic Underwear" nearly six months. Have not had a cold during the time, nor a sense of chilliness even during the coldest weather. My Catarrh has scarcely troubled me at all during the winter, and I would not be without these suits were the cost ten times what it is. You are at liberty to say to railroad men, and others exposed in extreme changes of climate, that they cannot afford to be without the "Jaros Hygienic Underwear."

Yours truly,

J. F. MERRY.

Preceding this, Mr. Merry wrote a friend in Dubuque, dated

MANCHESTER, IA., Dec. 1, 1886.

Going home yesterday to dinner, I found awaiting me a suit of underwear, and I was not very long in putting myself inside of them, but with no idea that I could wear them, having tried almost everything that contained wool, but never having found a garment I could wear next to my skin containing a particle of wool. I have worn the suit for two days without an unpleasant sensation; on the contrary, they are delightful, and just what I needed.

Please have the following order filled for me.

\* \* \* \* \*

Yours truly,

J. F. MERRY.

#### MISSOURI PACIFIC RAILROAD CO.

W. R. OUTTEN, Chief Surgeon Missouri Pacific R. R. Co., Dean Beaumont Hospital Medical College.

ST. LOUIS, October, 1887.

Approved and recommended for use by the Engineers, Firemen and Brakemen of the Missouri Pacific Railroad Co., by W. B. OUTTEN, M. D., to A. W. DICKENSON, Esq., Superintendent.

#### BALTIMORE & OHIO RAILROAD CO.

R. HARVEY REED, M. D., Surgeon Chief, Baltimore & Ohio R. R. Co., Secretary State Sanitary Association, Ohio.

MANSFIELD, O., March 9, 1889.

MR. J. JAROS, Chicago, Ill.

Dear Sir:—From personal experience I find your underwear the most comfortable and the best safeguard from taking cold of anything of the kind I have ever seen.

I have no hesitation whatever in heartily seconding it for Railroad employes, Police and Fire Departments, as especially well suited for their use, or any person exposed to the sudden changes of the weather in our climate.

Yours very truly,

R. HARVEY REED, M. D.

**EXECUTIVE COMMITTEE, LEGISLATIVE BOARD.**

Brotherhood of Locomotive Engineers,

MARSHALLTOWN, IOWA, April 9, 1889.

J. S. MILLARD, Secretary.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sir:—I received your Bowel and Kidney Band, which I put on promptly, and wore it until a few days ago. To say with flattering results, would be putting it mild.

Away with electric belts, etc.; what we Locomotive Engineers want is better, and the proper material in such protectors for our bowels, kidneys and lungs, which are constantly exposed to improper currents of air.

Since wearing your Bowel and Kidney Band I have had fewer colds and aches than previously, through our severe Iowa winters. I cheerfully recommend it to brother Engineers as filling a long felt want as a restorative to weak backs, sore lungs, etc. With best wishes for your success, I remain,

Very respectfully yours,

J. S. MILLARD.

**THE WABASH & WESTERN RAILWAY CO.**

Office General Master Mechanic,

MOBERLY, MO., April 13, 1889.

JAROS HYGIENIC UNDERWEAR CO., Chicago, Ill.

Dear Sir:—I find that your Kidney and Bowel Bands gave general satisfaction to our men who have used them, and hand you enclosed several testimonials. For myself I will say I am greatly pleased with the result of wearing the Band. I find that I am not troubled with a very annoying pain in side and back when wearing the Band. I like it very much, and shall next winter provide myself with Bands and Underwear of the same quality.

Yours truly,

A. W. QUACKENBUSH, General M. M.

**WABASH & WESTERN RAILWAY CO.**

MOBERLY, MO., April 10, 1889.

To A. W. QUACKENBUSH, General M. M.

Dear Sir:—Replying to your attached note, will say that I have been wearing the Bowel Bands for the past three months, and I think they have

done me considerable good, and I can safely recommend them to other Engineers having cause to use them.

Yours truly,

GEO. HAGER, Engineer.

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**WABASH & WESTERN RAILWAY CO.**

MOBERLY, MO., April 15, 1889.

A. W. QUACKENBUSH, M. M.

Dear Sir:—In regard to the Bowel and Kidney Band I will say, I have given it good use, and think it is doing me much good, as I have had no trouble with my kidneys since wearing it.

Yours respectfully,

W. L. DuBois, Engineer.

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Many other reports confirm the above.

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**SWITCHMEN'S MUTUAL AID ASSOCIATION,  
OF NORTH AMERICA.**

OFFICE OF THE GRAND LODGE,

E. P. MURDOCK, M.D., Grand Medical Examiner.

CHICAGO, Ill., January 4th, 1890.

DR. I. JAROS.

I have very carefully examined and tested the "Jaros Hygienic Wear," and I find it the best hygienic wear manufactured. It is so constructed as to conduct the moisture away from the body, thus retaining even temperature, and preventing chilling of the surface by sudden changes.

The heavy will be especially adapted to switchmen and other railway employees who are greatly exposed to the weather where cumbersome overclothing is not only undesirable, but positively dangerous, as such heavy outside garments impede their movements, and thus place them in danger of accidents.

I especially recommend this wear to railway employees as a means of comfort, safety and health.

Very truly,

E. P. MURDOCK,

Grand Medical Examiner,  
Switchmen's Association.

## PAUL BOYTON, World Famed Swimmer.

634 Cleveland Avenue,

CHICAGO, April 3, 1890.

DEAR SIR:—You are acquainted with the history of my accidentally learning of your underwear, and know the many doubts I had while purchasing. I have given the garments the severest tests possible to satisfy myself whether the goods were really what I so much needed, and would hold out in the claims you made.

I have bought the best woolen and heaviest silk underwear in prominent cities where I have travelled, abroad as well as in this country, with the special view of getting something that would protect me while in my rubber dress, on the long, cold and damp voyages I make. The exercise and heavy rubber suit which I wear often cause active perspiration, and my observation has been that from one to one and a half pounds of moisture is thrown off during an exhibition lasting from one and a half to two hours. With all other kind of underwear, this moisture was taken up only partially, the garments becoming thoroughly wet, and causing a chilling which was always hard for me to overcome; in fact, after these aquatic exhibitions, I found it absolutely necessary to be well rubbed to draw the blood to the surface and produce reaction, to prevent trouble.

I speak of other underwear to give you an idea of this action, and the difference in the body under trying conditions.

Your wool I found admirably selected and prepared, and so incorporated to act quickly and absorb the moisture thrown off.

My experience is that the "*Jaros Hygienic Underwear*" does not only relieve the body of perspiration, but also carries it to the cotton framework outside, which thoroughly retains it, thereby keeping the wool inside perfectly dry.

Since I began to use the underwear, I have never felt the chilling which had always affected me with other underclothing, and I do not find rubbing after an exhibition necessary.

I have no trace of rheumatic pain, and I feel physically much better. The difference in the amount of perspiration seems to me marked, which I attribute to the fact that the body temperature remains more nearly the same. I am so well pleased with your underwear, that I use it for general wear as well, and find every point you have claimed to be realized in its use. In conclusion, I can say, that your underwear is a boon and blessing to men exposed as sailors, firemen, soldiers, and as well as the general public. Wishing you the success you deserve,

I remain, yours very respectfully,

PAUL BOYTON.

We refer with permission to the following chiefs of Fire Departments, who use and recommend this wear for its value in Department service :

Chief Hughes	-	-	-	Fire Dep't. Louisville, Ky.
" Lemoine	-	-	-	" Grand Rapids, Mich.
" Evans	-	-	-	" Pittsburgh, Pa.
" Stettson	-	-	-	" Minneapolis, Minn.
" Fowley	-	-	-	" Milwaukee, Wis.
" Lindsay	-	-	-	" St. Louis, Mo.
" Bentley	-	-	-	" Eaton Rapids, Mich.
" Kiersted	-	-	-	" Newark, N. J.

Etc., Etc., Etc.

### R. R. SURGEONS.

The following Surgeons have recommended the "Jaros Hygienic Wear" to the employees.

- DR. J. W. JACKSON, Kansas City, Mo., Chief Surgeon. Wabash & Western R. R. Co.
- DR. R. HARVEY REED, Mansfield, O., Chief Surgeon. Baltimore & Ohio R. R. Co.
- DR. W. B. OUTEN, St. Louis, Mo., Chief Surgeon. Missouri Pacific R. R. Co.
- DR. J. H. MURPHY, St. Paul, Minn., Chief Surgeon. Northern Pacific R. R. Co.
- DR. W. R. NUGENT, Oskaloosa, Ia., Chief Surgeon. Central Iowa R. R. Co.
- DR. J. W. SANDERS, Broken Bow, Neb., Chief Surgeon. Chicago, Burlington & Quincy R. R. Co.

And others.















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